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TABLES OF AMPLITUDE
AND ENERGY RATIOS
FOR PLANE SV WAVES

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NOTICES

PREFACE

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ABSTRACT

This report presents tabulations of energy ratios calculated from Knott's energy equation, and amplitude ratios calculated from the Zeoppritz equations, for a plane SV wave incident on a plane elastic discontinuity. All computations were programmed in FORTRAN for an IBM 1620 digital computer. Incident angles were varied from 0^0 to 90^0 in increments of 2^0 except near the critical angles, where the ratios were calculated in increments of 0.25^0 generally. Both real and imaginary coefficients were considered in the calculations. The varying parameters were the velocity ratio and density ratio across each interface, and the angle of incidence. Energy ratios were computed for a Poisson's ratio of 0.25 only, and amplitude ratios were computed for Poisson's ratios of both 0.25 and 0.40. Compressional velocity ratios (transmitted/incident) of 0.7, 0.8, and 0.9, and density ratios (transmitted/incident) of 0.7, 0.8, 0.9, and 1.0 were used. The data are presented in 36 tables, 12 for energy ratios and 24 for amplitude ratios.

1
INTRODUCTION

Energy ratios from Knott's energy equation and amplitude ratios from the Zoeppritz equations are presented in tabular form for a plane SV wave incident on a plane elastic discontinuity. All computations were programmed in FORTRAN for an IBM 1620 digital computer with a core storage of 60,000 bits. Both real and imaginary coefficients were considered in the calculations. The velocity ratio, the density ratio, and the angle of incidence were varied across each interface. Compressional velocity ratios (transmitted/incident) of 0.700, 0.800, and 0.900, and density ratios (transmitted/incident) of 0.700, 0.800, 0.900, and 1.000, are used.

With the exception of the amplitude-ratio data for Poisson's ratio equal to 0.400, all of the data presented herein in tabular form are shown as curves in a recent publication [1], for which Poisson's ratio was kept constant at 0.25.

2
GENERAL METHOD OF COMPUTATION AND ACCURACY OF DATA

The determination of the relative energies and amplitudes of waves derived from a plane SV wave incident on a plane interface involves the solution of four simultaneous linear equations [2, 3] with real and imaginary coefficients. The equations were solved in the real and complex domains by the Crout method [4], which was programmed in FORTRAN I and FORTRAN II. The

variable-field-length capability of the 1620 FORTRAN II system provided a means of checking the accuracy of the solutions, most of which were obtained by using a floating-point precision of eight decimal places. Those solutions which were obtained in FORTRAN II by using a floating-point precision of sixteen decimal places differed only in the seventh decimal place from those obtained by using a precision of eight decimal places. A conservation-of-energy check on all solutions was satisfied in every set of computations to at least the sixth decimal place in FORTRAN I, and to the fourteenth decimal place when the higher precision was used in FORTRAN II. The numerical results presented in the tables are accurate to the sixth decimal place.

3
ENERGY AND AMPLITUDE RATIOS

Amplitude ratios were determined from the Zoeppritz equations for a plane SV wave of amplitude B incident on a plane interface. These equations are [5, pp. 670-673]:

$$(B + D) \sin b + C \cos a - E \cos e - F \sin f = 0$$
$$(B - D) \cos b + C \sin a + E \sin e - F \cos f = 0$$
$$(B + D) \cos 2b - C(V/U) \sin 2a + EK(Z^2/VY) \sin 2e - FK(Z/V) \cos 2f = 0 \qquad (1)$$
$$-(B - D) \sin 2b + C(U/V) \cos 2b + EK(Y/V) \cos 2f + FK(Z/V) \sin 2f = 0$$

where the angles and the velocities U, V, Y, and Z are as defined in Figure 1. The angle a is the angle of incidence of a compressional wave of velocity U which would generate four waves with the same reference angles as shown in Figure 1. K is the density contrast, equal to ρ_1/ρ_2, where ρ_1 and ρ_2 are the densities of the upper and lower media, respectively.
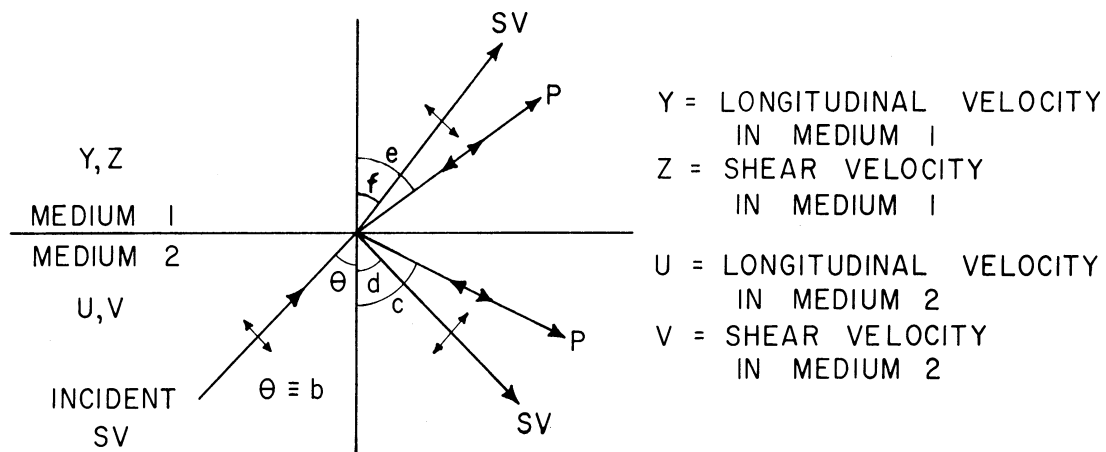
FIGURE 1

With B set equal to unity, the equations were solved for C, D, E, and F, which are the amplitudes of the reflected P, reflected S, transmitted P, and transmitted S waves, respectively. The quantities are complex after the first critical angle of 35.264^O, for a Poisson's ratio of 0.250. For velocity ratios Y/U equal to 0.700, 0.800, and 0.900, second critical angles occur at 55.567, 46.194, and 39.904 degrees, respectively, for Poisson's ratio of 0.250.

Both the real and the imaginary parts of the complex amplitudes are printed out in the tables. The physically significant quantity is the modulus of the complex amplitude, which is the square root of the sum of the squares of the real and imaginary parts of the complex amplitudes.

The phase shifts associated with the complex domain can be determined from the entries in the tables. Beyond the first critical angle, the amplitudes of the derived waves are complex, and all derived wave amplitudes will generally undergo phase changes. The complex amplitudes computed from the Zoeppritz equations are printed out in the form a + ib. The phase angle ϕ of the derived wave is given by

$$\phi = \tan^{-1} \frac{b}{a}$$

The quantities a and b identify the quadrant and thus the phase angle of the derived wave.

The distribution of energy among the four waves derived from a plane incident SV wave can be obtained from Knott's energy equation for an incident SV wave [6, p. 173, Equation 7.80], which can be written in the form:

$$1 = \frac{(\cot c)\ C^2 U^2}{(\cot d)\ V^2} + D^2 + \frac{\rho_1 (\cot e)\ E^2 Y^2}{\rho_2 (\cot d)\ V^2} + \frac{\rho_1 (\cot f)\ F^2 Z^2}{\rho_2 (\cot d)\ V^2} \tag{2}$$

The terms on the right-hand side of this equation represent the energies of the reflected P, reflected S, transmitted P, and transmitted S waves, respectively, relative to the energy of an incident SV wave of amplitude B, with B set equal to unity. The energy ratios were obtained by determining the amplitudes C, D, E, and F from the Zoeppritz equations, inserting these values in Equation 2, and then evaluating each term in the equation. These individual ratios were then printed out as the energies of the reflected P, reflected S, transmitted P, and transmitted S waves, respectively, relative to the energy of an incident SV wave.

The computed energy ratios from Equation 2 serve as a useful check on the accuracy of the amplitudes determined from the Zoeppritz equations. The sum of the terms on the right-hand side of Equation 2 differs from unity only in the seventh decimal place at worst, when a floating-point precision of eight decimal places was used in the computations.

In applying the conservation-of-energy equation for angles greater than 35.264 degrees, for Poisson's ratio of 0.250, the terms on the right-hand side of Equation 2 are complex. The imaginary parts of all of these terms must add up to zero and the real parts to unity, in every set of computations. The sum of the moduli of the complex energies of those derived waves whose angles of reflection or refraction are not imaginary will be unity. The moduli of those waves showe angles of reflection or refraction are imaginary are not included in the summation.

4
FORMAT OF TABLES

The velocity ratio (transmitted/incident), Poisson's ratio for the incident medium, Poisson's ratio for the transmitted medium, and the density ratio (transmitted/incident) are listed above each set of computations for both energy ratios and amplitude ratios.

Energy ratios computed in the real domain are presented in the following format:

ANGLE	ERP	ERS	ETP	ETS	ENERGY
2.00	.00126547	.11566885	.00025266	.88281290	.99999988

where ANGLE refers to the angle of incidence, in degrees, of the plane SV ray, and ERP, ERS, ETP, and ETS are the energy ratios of the reflected P, reflected S, transmitted P, and transmitted S waves, respectively, to the energy of a plane SV wave. The ENERGY column is the conservation-of-energy check; for the energy computations, it is the sum of ERP, ERS, ETP, and ETS for a particular angle of incidence.

Energy ratios computed in the complex domain are presented in the following format:

ANGLE	ERP	ERS	ETP	ETS	ENERGY
37.00	.03779700	.04416885	.08750717	.83052694	.99999997
	.01022057J	.00826448J	.08019472J	-.09867977J	.00000000
	.03915448M	.04493539M	.11869582M	.83636875M	

For each angle of incidence, the imaginary part of the complex energy is followed by the letter J, and the real part is printed above this. The modulus is the square root of the sum of the squares of these first two entries, and is followed by the letter M. The first line in the ENERGY column for each angle of incidence is the algebraic sum of the real parts of the complex energies of the derived waves, and the second line in the ENERGY column is the algebraic sum of the imaginary parts of the complex energies of the derived waves. Theoretically, the former should be exactly unity, and the latter should be zero.

When the coefficient of a derived wave in the Zoeppritz equations becomes imaginary—that is, when the angle of reflection or refraction of that wave becomes imaginary—the computer is programmed to print the word IMAGINARY in the column corresponding to that particular derived wave just after the last set of computations for which the angle was real, that is, for which the derived wave existed physically. An example appears on the second page of the tabular material. In determining a conservation-of-energy check for those waves which do exist, only the moduli of coefficients not preceded anywhere in the column by the word IMAGINARY are used. Such calculations were not printed out explicitly, since the real and imaginary parts of the complex energies were always checked. The sum of the moduli of waves whose coefficients are not imaginary, however, should be unity.

Amplitude ratios computed in the real domain are presented in the following format:

ANGLE	RP	RS	TP	TS	ENERGY
26.00	.25561126	-.02091038	.23283892	1.29804660	.99999988

where ANGLE refers to the angle of incidence in degrees of the plane SV ray, and RP, RS, TP, and TS are the amplitudes of the reflected P, reflected S, transmitted P, and transmitted S waves, respectively, relative to the amplitude of an incident SV wave of unit amplitude. Sign changes in the real domain correspond to phase shifts of 180° with respect to the incident wave. The ENERGY column is the conservation-of-energy check, and is the algebraic sum of each of the terms in Equation 2.

Amplitude ratios computed in the complex domain are presented in the following format:

ANGLE	RP	RS	TP	TS	ENERGY
36.00	.29276898	.17911049	.27812276	1.27313730	1.00000000
	-.13548989J	.02127643J	.13531673J	-.06442387J	-.00000000
	.32260065M	.18036977M	.30929417M	1.27476620M	

For each angle of incidence, the imaginary part of the complex amplitude is followed by the letter J, and the real part is printed above this. The modulus is the square root of the sum of the squares of these first two entries, and is followed by the letter M. The first line in the ENERGY column for each angle of incidence is the algebraic sum of the real parts of each term in Equation 2; the second line is the algebraic sum of the imaginary parts of the terms. The word IMAGINARY is inserted by the computer, as described above, whenever a coefficient becomes imaginary.

Phase angles can be determined from the real and imaginary parts of the complex amplitudes a + ib by the relation

$$\phi = \tan^{-1} \frac{b}{a}$$

A later modification of the FORTRAN program provided for the computation of these phase angles by use of the relation above. Amplitude ratios for a velocity ratio of 0.900, a density ratio of 0.800, and Poisson's ratio of 0.250 were computed by using this modified program. Phase angles are followed by the letters PA. In most computations, this angle must be added to or subtracted from 180° to identify the phase angle with the proper quadrant.

REFERENCES

1. J. K. Costain, K. L. Cook, and S. T. Algermissen, "Amplitude, Energy, and Phase Angles of Plane SV Waves and Their Application to Earth Crustal Studies," Bull. Seis. Soc Am., 1963, Vol. 53, pp. 1039-1074.

2. C. G. Knott, "Reflexion and Refraction of Elastic Waves, with Seismological Applications," Phil. Mag. London, 1899, Vol. 48, pp. 64-97 and 567-569.

3. Karl Zoeppritz, 1919, "Über Erdbebenwellen VIIB: Über Reflexion and Durchgang Seismischer Wellen durch Unstetigkeitsfläschen," Nachr. der Königlichen Gesell. d. Wissen, Göttingen, math.-phys. Kl., 1919, p. 66-84.

4. P. D. Crout, "A Short Method for Evaluating Determinants and Solving Systems of Linear Equations with Real or Complex Coefficients," Trans. Am. Inst. Elec. Eng., 1941, Vol. 60, pp. 1235-1240.

5. C. F. Richter, Elementary Seismology, W. H. Freeman and Co., San Francisco, 1958.

6. J. B. Macelwane, Introduction to Theoretical Seismology, Part 1: Geodynamics, St. Louis University, St. Louis, 1932.

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	.700

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.11715687	.00000000	.88284302	.99999989
1.00	.00031745	.11678379	.00006315	.88283545	.99999984
2.00	.00126547	.11566885	.00025266	.88281290	.99999988
3.00	.00283102	.11382515	.00056865	.88277505	.99999987
4.00	.00499257	.11127462	.00101133	.88272144	.99999996
5.00	.00772020	.10804750	.00158096	.88265131	.99999997
6.00	.01097597	.10418214	.00227790	.88256388	.99999989
7.00	.01471420	.09972482	.00310259	.88245825	.99999987
8.00	.01888198	.09472927	.00405549	.88233319	.99999994
9.00	.02341964	.08925600	.00513714	.88218710	.99999988
10.00	.02826131	.08337186	.00634812	.88201872	1.00000000
11.00	.03333564	.07714950	.00768903	.88182568	.99999985
12.00	.03856646	.07066654	.00916047	.88160628	.99999975
13.00	.04387361	.06400488	.01076303	.88135841	.99999994
14.00	.04917375	.05724973	.01249726	.88107901	.99999975
15.00	.05438135	.05048902	.01436362	.88076575	.99999974
16.00	.05940949	.04381217	.01636242	.88041568	.99999976
17.00	.06417106	.03730936	.01849380	.88002563	.99999985
18.00	.06857968	.03107032	.02075756	.87959224	.99999981
19.00	.07255093	.02518344	.02315315	.87911232	.99999984
20.00	.07600332	.01973455	.02567941	.87858259	.99999989
21.00	.07885959	.01480585	.02833441	.87800001	.99999986

22.00	.08104787	.01047472	.03111513	.87736216	.99999989
23.00	.08250283	.00681257	.03401695	.87666763	.99999999
24.00	.08316689	.00388352	.03703309	.87591643	.99999994
25.00	.08299139	.00174318	.04015349	.87511175	.99999981
26.00	.08193759	.00043724	.04336327	.87426172	.99999983
27.00	.07997740	.00000001	.04664017	.87338228	.99999987
28.00	.07709389	.00045272	.04995020	.87250295	.99999977
29.00	.07328073	.00180141	.05323975	.87167798	.99999988
30.00	.06853912	.00403399	.05642089	.87100589	.99999990
31.00	.06286998	.00711533	.05934044	.87067424	1.00000000
32.00	.05624974	.01097730	.06170804	.87106496	1.00000000
33.00	.04855165	.01549239	.06289728	.87305869	1.00000000
34.00	.03918888	.02037436	.06120665	.87922992	.99999981
35.00	.02327763	.02432781	.04809952	.90429488	.99999986
35.25	.00734361	.02319058	.03119010	.93827562	.99999992

IMAGINARY

35.50	.01432570	.02511924	.02850934	.93204580	1.00000000
	.02657883J	.00480707J	.02868851J	−.06007442J	.00000000
	.03019371M	.02557507M	.04044519M	.93397981M	
35.75	.02520644	.02836078	.03496344	.91146926	.99999993
	.02949627J	.00657728J	.04366246J	−.07973602J	.00000000
	.03879942M	.02911348M	.05593615M	.91495029M	
36.00	.03243845	.03162788	.04345066	.89248302	1.00000000
	.02754074J	.00762166J	.05539313J	−.09055553J	.00000000
	.04255286M	.03253325M	.07040141M	.89706534M	
37.00	.03779700	.04416885	.08750717	.83052694	.99999997
	.01022057J	.00826448J	.08019472J	−.09867977J	.00000000
	.03915448M	.04493539M	.11869582M	.83636875M	
38.00	.02639527	.05492118	.13211251	.78657095	.99999991
	−.00088263J	.00619907J	.07855035J	−.08386678J	.00000000
	.02641002M	.05526992M	.15370059M	.79102938M	
39.00	.01336902	.06360601	.16737181	.75565297	.99999981
	−.00352893J	.00348849J	.06111597J	−.06107552J	.00000000
	.01382693M	.06370160M	.17818104M	.75811715M	

40.00	.00430558	.07048978	.19114991	.73405478	1.00000000
	-.00200109J	.00126061J	.03637358J	-.03563310J	.00000000
	.00474789M	.07050105M	.19457987M	.73491913M	
41.00	.00030389	.07595315	.20461330	.71912978	1.00000010
	-.00019805J	.00009996J	.00986229J	-.00976421J	-.00000000
	.00036273M	.07595321M	.20485084M	.71919605M	
42.00	.00072634	.08031694	.20992227	.70903442	.99999998
	-.00060418J	.00026775J	-.01526490J	.01560133J	-.00000000
	.00094478M	.08031739M	.21047654M	.70920604M	
43.00	.00448902	.08379486	.20922335	.70249266	.99999989
	-.00452474J	.00184514J	-.03744223J	.04012183J	-.00000000
	.00637374M	.08381517M	.21254724M	.70363747M	
44.00	.01058416	.08649614	.20429686	.69862283	1.00000000
	-.01249868J	.00481869J	-.05604982J	.06372980J	-.00000000
	.01637808M	.08663026M	.21184614M	.70152358M	
45.00	.01824465	.08844394	.19649411	.69681743	1.00000010
	-.02462734J	.00912701J	-.07098406J	.08648440J	.00000001
	.03064919M	.08891362M	.20892264M	.70216385M	
46.00	.02695958	.08959429	.18678174	.69666438	.99999999
	-.04079050J	.01468402J	-.08239409J	.10850058J	.00000001
	.04889462M	.09078963M	.20414750M	.70506285M	
47.00	.03643768	.08985170	.17581369	.69789701	1.00000000
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48.00	.04655982	.08907895	.16399724	.70036400	1.00000000
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	.09635084M	.09372069M	.18984973M	.71642957M	
49.00	.05733573	.08710264	.15154277	.70401898	1.00000010
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51.00	.08133581	.07864972	.12471668	.71529774	.99999995
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	.19294562M	.09726372M	.15657007M	.74616614M	
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53.00	.11000543	.06202701	.09325962	.73470794	1.00000000
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	.27520578M	.09989611M	.12278578M	.77731808M	

54.00	.12677562	.04910613	.07328218	.75083612	1.00000000
	-.29798460J	.08887559J	-.06618618J	.27529519J	.00000000
	.32383156M	.10153956M	.09874659M	.79971389M	
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	.42822342M	.10481573M	.02224510M	.87293924M	

IMAGINARY

55.75	.13154457	.00447633	.02751256	.83646663	1.00000000
	-.42081791J	.11846619J	.02436510J	.27798666J	.00000004
	.44089871M	.11855072M	.03675050M	.88144937M	
56.00	.12237973	.00268010	.04238401	.83255629	1.00000010
	-.42571568J	.12696390J	.03608675J	.26266503J	.00000000
	.44295669M	.12699218M	.05566559M	.87300795M	
57.00	.11388840	-.00678991	.07690186	.81599966	1.00000000
	-.44807438J	.14993976J	.06046715J	.23766740J	-.00000007
	.46232154M	.15009341M	.09782726M	.84990660M	
58.00	.12027522	-.01906275	.09958867	.79919904	1.00000010
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59.00	.13424903	-.03390088	.11738382	.78226798	.99999995
	-.49767483J	.18163331J	.08657072J	.22947077J	-.00000003
	.51546390M	.18476993M	.14585421M	.81523004M	
60.00	.15391673	-.05122148	.13216700	.76513778	1.00000000
	-.52316412J	.19340018J	.09640754J	.23335633J	-.00000007
	.54533573M	.20006816M	.16359257M	.79993186M	
61.00	.17848834	-.07094651	.14474593	.74771222	.99999998
	-.54832380J	.20254676J	.10544454J	.24033246J	-.00000004
	.57664293M	.21461266M	.17908080M	.78538732M	
62.00	.20755048	-.09296532	.15553079	.72988399	.99999994
	-.57260145J	.20884093J	.11410028J	.24966013J	-.00000011
	.60905633M	.22859808M	.19289557M	.77140185M	
63.00	.24083414	-.11711441	.16474302	.71153718	.99999993
	-.59543242J	.21195091J	.12262894J	.26085249J	-.00000008
	.64229342M	.24215485M	.20537312M	.75784508M	

64.00	.27811624	-.14316299	.17249945	.69254737	1.00000000
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	.67608161M	.25538440M	.21672001M	.74461567M	
65.00	.31916679	-.17079948	.17885171	.67278094	.99999996
	-.63437449J	.20701043J	.13989367J	.28747041J	.00000002
	.71013972M	.26837619M	.22706424M	.73162382M	
66.00	.36371376	-.19961856	.18380816	.65209668	1.00000000
	-.64922605J	.19807936J	.14879101J	.30235561J	-.00000007
	.74416541M	.28121700M	.23648299M	.71878299M	
67.00	.41141536	-.22910745	.18734545	.63034660	.99999996
	-.66011446J	.18423752J	.15790722J	.31796964J	-.00000008
	.77782626M	.29399606M	.24501634M	.70600391M	
68.00	.46183888	-.25863347	.18941716	.60737740	.99999997
	-.66635437J	.16504782J	.16723194J	.33407455J	-.00000006
	.81075477M	.30680947M	.25267643M	.69319052M	
69.00	.51443941	-.28743198	.18995954	.58303314	1.00000010
	-.66725462J	.14011166J	.17672219J	.35042072J	-.00000005
	.84254177M	.31976306M	.25945203M	.68023695M	
70.00	.56853973	-.31459560	.18889695	.55715903	1.00000010
	-.66213481J	.10909628J	.18630131J	.36673713J	-.00000009
	.87273130M	.33297505M	.26531158M	.66702496M	
71.00	.62331152	-.33906578	.18614694	.52960738	1.00000000
	-.65034635J	.07176669J	.19585669J	.38272303J	.00000006
	.90081497M	.34657762M	.27020460M	.65342245M	
72.00	.67775994	-.35962980	.18162665	.50024330	1.00000000
	-.63130151J	.02802520J	.20523672J	.39803952J	-.00000007
	.92622898M	.36072011M	.27406267M	.63927992M	
73.00	.73070895	-.37492290	.17525944	.46895444	.99999993
	-.60450705J	-.02204391J	.21424749J	.41230340J	-.00000007
	.94834821M	.37557037M	.27679930M	.62442962M	
74.00	.78079248	-.38343952	.16698403	.43566293	.99999992
	-.56960855J	-.07812142J	.22264995J	.42508004J	.00000002
	.96648372M	.39131677M	.27831037M	.60868319M	
75.00	.82645303	-.38355704	.15676483	.40033909	.99999991
	-.52644170J	-.13959513J	.23015694J	.43587984J	-.00000005
	.97988033M	.40817006M	.27847339M	.59182989M	
76.00	.86595054	-.37357527	.14460518	.36301959	1.00000000
	-.47509168J	-.20549621J	.23643273J	.44415520J	.00000004
	.98771576M	.42636506M	.27714814M	.57363495M	
77.00	.89738675	-.35177587	.13056216	.32382708	1.00000010
	-.41596066J	-.27443497J	.24109376J	.44930188J	.00000001
	.98910376M	.44616231M	.27417636M	.55383766M	

5

78.00	.91874359	−.31650504	.11476458	.28299694	1.00000000
	−.34984161J	−.34453699J	.24371344J	.45066520J	.00000004
	.98309660M	.46784738M	.26938290M	.53215259M	
79.00	.92795125	−.26628643	.09743255	.24090275	1.00000010
	−.27799321J	−.41339008J	.24383129J	.44755208J	.00000008
	.96869692M	.49173145M	.26257722M	.50826861M	
80.00	.92297978	−.19996146	.07889751	.19808424	1.00000000
	−.20220737J	−.47801180J	.24096795J	.43925120J	−.00000002
	.94487009M	.51815042M	.25355545M	.48184954M	
81.00	.90196341	−.11686515	.05962304	.15527875	1.00000000
	−.12487233J	−.53484147J	.23464847J	.42506544J	.00000011
	.91056635M	.54746037M	.24210495M	.45253963M	
82.00	.86335914	−.01702528	.04022197	.11344415	.99999998
	−.04900240J	−.57978411J	.22443299J	.40435359J	.00000007
	.86474865M	.58003402M	.22800871M	.41996595M	
83.00	.80613572	.09861738	.02146815	.07377880	1.00000000
	.02176433J	−.60831085J	.20995843J	.37658809J	.00000000
	.80642946M	.61625276M	.21105312M	.38374718M	
84.00	.72998785	.22798775	.00429806	.03772644	1.00000010
	.08322521J	−.61563809J	.19098824J	.34142466J	.00000002
	.73471674M	.65649727M	.19103659M	.34350266M	
85.00	.63555954	.36767743	−.01020116	.00696409	.99999989
	.13074052J	−.59699503J	.16747033J	.29878425J	.00000007
	.64886748M	.70113462M	.16778073M	.29886539M	
86.00	.52465713	.51280213	−.02082353	−.01663579	1.00000000
	.15944487J	−.54798572J	.13959884J	.24894206J	.00000005
	.54835003M	.75050274M	.14114338M	.24949729M	
87.00	.40041753	.65695654	−.02629855	−.03107547	1.00000010
	.16454909J	−.46503849J	.10787307J	.19261636J	.00000003
	.43290945M	.80489297M	.11103248M	.19510701M	
88.00	.26739750	.79230939	−.02537099	−.03433588	1.00000010
	.14172501J	−.34591719J	.07314621J	.13104600J	.00000003
	.30263410M	.86453043M	.07742129M	.13546957M	
89.00	.13154206	.90987745	−.01690385	−.02451564	1.00000010
	.08755419J	−.19024842J	.03665210J	.06604215J	.00000002
	.15801598M	.92955442M	.04036232M	.07044559M	
90.00	−.00000044	1.00000020	.00000008	.00000007	.99999995
	−.00000037J	.00000078J	−.00000015J	−.00000028J	−.00000002
	.00000058M	1.00000010M	.00000017M	.00000029M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	.700

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.07955294	.00000000	.92044712	1.00000000
1.00	.00021203	.07930729	.00003151	.92044907	.99999991
2.00	.00084535	.07857311	.00012609	.92045536	.99999993
3.00	.00189166	.07735867	.00028380	.92046571	.99999985
4.00	.00333717	.07567776	.00050479	.92048009	.99999982
5.00	.00516277	.07354951	.00078923	.92049838	.99999989
6.00	.00734414	.07099817	.00113735	.92052031	.99999998
7.00	.00985200	.06805303	.00154943	.92054544	.99999991
8.00	.01265233	.06474814	.00202577	.92057368	.99999992
9.00	.01570667	.06112191	.00256673	.92060465	.99999996
10.00	.01897246	.05721698	.00317267	.92063783	.99999994
11.00	.02240343	.05307969	.00384398	.92067270	.99999980
12.00	.02594999	.04875976	.00458105	.92070914	.99999995
13.00	.02955973	.04430983	.00538428	.92074602	.99999987
14.00	.03317783	.03978488	.00625399	.92078319	.99999989
15.00	.03674773	.03524187	.00719047	.92081976	.99999984
16.00	.04021155	.03073915	.00819393	.92085508	.99999972
17.00	.04351078	.02633576	.00926442	.92088894	.99999991
18.00	.04658687	.02209099	.01040182	.92092015	.99999983
19.00	.04938195	.01806363	.01160570	.92094867	.99999996
20.00	.05183941	.01431137	.01287530	.92097375	.99999984
21.00	.05390477	.01089008	.01420932	.92099574	.99999992

22.00	.05552621	.00785303	.01560574	.92101483	.99999982
23.00	.05665558	.00525027	.01706154	.92103258	.99999997
24.00	.05724900	.00312771	.01857226	.92105096	.99999994
25.00	.05726769	.00152636	.02013144	.92107438	.99999988
26.00	.05667865	.00048139	.02172952	.92111024	.99999980
27.00	.05545538	.00002116	.02335240	.92117099	.99999994
28.00	.05357828	.00016609	.02497877	.92127679	.99999994
29.00	.05103452	.00092725	.02657536	.92146280	.99999993
30.00	.04781670	.00230443	.02808814	.92179073	1.00000000
31.00	.04391813	.00428311	.02942384	.92237496	1.00000000
32.00	.03931831	.00682843	.03040709	.92344610	.99999994
33.00	.03393279	.00987004	.03066144	.92553571	.99999999
34.00	.02737914	.01324540	.02916974	.93020567	.99999996
35.00	.01636597	.01621066	.02091213	.94651113	.99999989
35.25	.00524338	.01572861	.01119798	.96782996	.99999995

IMAGINARY

35.50	.01078471	.01709862	.00824543	.96387117	.99999994
	.01858441J	.00281914J	.01607993J	-.03748349J	.00000000
	.02148698M	.01732947M	.01807073M	.96459973M	
35.75	.01863886	.01923270	.01115803	.95097048	1.00000000
	.01991626J	.00380115J	.02582792J	-.04954534J	.00000000
	.02727754M	.01960473M	.02813509M	.95226025M	
36.00	.02352831	.02136440	.01599775	.93910952	.99999999
	.01782621J	.00433656J	.03383078J	-.05599355J	.00000001
	.02951873M	.02180007M	.03742258M	.94077731M	
37.00	.02489900	.02940872	.04475668	.90093571	1.00000010
	.00449194J	.00435064J	.05038249J	-.05922509J	-.00000000
	.02530094M	.02972879M	.06739106M	.90288025M	
38.00	.01495509	.03617221	.07388965	.87498307	1.00000000
	-.00213901J	.00287552J	.04676005J	-.04749655J	.00000000
	.01510728M	.03628632M	.08744245M	.87627124M	
39.00	.00567021	.04156506	.09448329	.85828149	1.00000000
	-.00231346J	.00124867J	.03149831J	-.03043352J	-.00000000
	.00612400M	.04158381M	.09959536M	.85882088M	

40.00	.00074761	.04579190	.10484125	.84861915	.99999991
	-.00049466J	.00019183J	.01185864J	-.01155581J	.00000000
	.00089644M	.04579230M	.10550978M	.84869782M	
41.00	.00029432	.04908396	.10612748	.84449431	1.00000000
	-.00027303J	.00008894J	-.00743188J	.00761597J	.00000000
	.00040146M	.04908404M	.10638737M	.84452864M	
42.00	.00317954	.05159237	.10020870	.84501947	1.00000000
	-.00390009J	.00114302J	-.02365536J	.02641244J	.00000000
	.00503192M	.05160503M	.10296290M	.84543214M	
43.00	.00803847	.05334682	.08871419	.84990040	.99999989
	-.01275472J	.00348405J	-.03528062J	.04455129J	-.00000000
	.01507647M	.05346047M	.09547214M	.85106727M	
44.00	.01357026	.05421009	.07259191	.85962772	.99999999
	-.02800221J	.00726118J	-.04116570J	.06190674J	.00000000
	.03111713M	.05469423M	.08345179M	.86185396M	
45.00	.01834643	.05370901	.05148872	.87645596	1.00000010
	-.05173065J	.01280920J	-.03940333J	.07832478J	-.00000000
	.05488763M	.05521534M	.06483603M	.87994875M	
46.00	.01834267	.04954683	.01887664	.91323392	1.00000000
	-.09403383J	.02181384J	-.02058112J	.09280111J	.00000000
	.09580613M	.05413624M	.02792687M	.91793694M	

IMAGINARY

46.25	-.00028939	.04724661	.01199311	.94104961	.99999995
	-.11574988J	.02962569J	.00865114J	.07747303J	-.00000001
	.11575023M	.05576669M	.01478773M	.94423325M	
46.50	-.01436391	.05089843	.02682241	.93664302	.99999995
	-.11209466J	.03448802J	.01831726J	.05928936J	-.00000000
	.11301121M	.06148230M	.03248021M	.93851764M	
46.75	-.02188434	.05342887	.03533948	.93311592	.99999993
	-.11122594J	.03797064J	.02328634J	.04996894J	-.00000001
	.11335843M	.06554704M	.04232178M	.93445289M	
47.00	-.02736555	.05559575	.04189491	.92987483	.99999994
	-.11134675J	.04104946J	.02679784J	.04349943J	-.00000000
	.11466024M	.06910822M	.04973237M	.93089172M	
48.00	-.04151879	.06273099	.06077454	.91801322	.99999996
	-.11641155J	.05207478J	.03533962J	.02899714J	.00000000
	.12359392M	.08152889M	.07030245M	.91847106M	
49.00	-.05043819	.06856454	.07501851	.90685528	1.00000010
	-.12553449J	.06262983J	.04030484J	.02259979J	-.00000001
	.13528828M	.09286330M	.08516019M	.90713684M	

50.00	-.05679395	.07344886	.08735988	.89598531	1.00000010
	-.13734938J	.07332478J	.04371657J	.02030801J	-.00000001
	.14862841M	.10378467M	.09768771M	.89621542M	
51.00	-.06134919	.07740476	.09866521	.88527922	1.00000000
	-.15136881J	.08434138J	.04624664J	.02078077J	-.00000001
	.16332862M	.11447692M	.10896594M	.88552308M	
52.00	-.06436652	.08036251	.10931332	.87469079	1.00000000
	-.16734995J	.09573933J	.04822013J	.02339049J	.00000000
	.17930157M	.12499661M	.11947628M	.87500347M	
53.00	-.06591305	.08221542	.11949699	.86420061	.99999996
	-.18514362J	.10752195J	.04983221J	.02778943J	-.00000001
	.19652656M	.13535266M	.12947115M	.86464729M	
54.00	-.06596117	.08283876	.12932335	.85379901	.99999994
	-.20463936J	.11965694J	.05121927J	.03376315J	.00000000
	.21500731M	.14553364M	.13909687M	.85446632M	
55.00	-.06442979	.08209828	.13885488	.84347668	1.00000000
	-.22574090J	.13208368J	.05248761J	.04116960J	-.00000000
	.23475551M	.15551921M	.14844401M	.84448081M	
56.00	-.06120461	.07985521	.14812865	.83322073	.99999997
	-.24835174J	.14471539J	.05372726J	.04990907J	-.00000001
	.25578231M	.16528580M	.15757130M	.83471413M	
57.00	-.05614838	.07596990	.15716615	.82301232	.99999998
	-.27236734J	.15743932J	.05501861J	.05990943J	.00000002
	.27809460M	.17481007M	.16651800M	.82518992M	
58.00	-.04910772	.07030508	.16597833	.81282415	.99999983
	-.29766769J	.17011516J	.05643634J	.07111617J	-.00000001
	.30169126M	.18407056M	.17531076M	.81592929M	
59.00	-.03991731	.06272914	.17456796	.80262032	1.00000010
	-.32411332J	.18257349J	.05805162J	.08348819J	-.00000001
	.32656213M	.19304927M	.18396728M	.80695083M	
60.00	-.02840349	.05311965	.18293097	.79235278	.99999991
	-.35154010J	.19461336J	.05993326J	.09699345J	-.00000002
	.35268568M	.20173263M	.19249866M	.79826728M	
61.00	-.01438789	.04136783	.19105672	.78196335	1.00000000
	-.37975467J	.20599964J	.06214862J	.11160642J	.00000001
	.38002713M	.21011222M	.20091072M	.78988775M	
62.00	.00230977	.02738345	.19892746	.77137928	.99999996
	-.40853115J	.21646088J	.06476374J	.12730652J	-.00000001
	.40853767M	.21818608M	.20920438M	.78181387M	
63.00	.02186693	.01110099	.20651779	.76051416	.99999987
	-.43760505J	.22568608J	.06784370J	.14407524J	-.00000003
	.43815104M	.22595892M	.21737609M	.77404099M	

64.00	.04445370	-.00751274	.21379330	.74926573	.99999999
	-.46666922J	.23332257J	.07145228J	.16189437J	.00000000
	.46878170M	.23344348M	.22541739M	.76655652M	
65.00	.07022723	-.02844994	.22070910	.73751366	1.00000000
	-.49536945J	.23897422J	.07565144J	.18074378J	-.00000001
	.50032264M	.24066174M	.23331448M	.75933833M	
66.00	.09932445	-.05165114	.22720833	.72511835	.99999999
	-.52329865J	.24219993J	.08050053J	.20059822J	.00000003
	.53264136M	.24764621M	.24104763M	.75235381M	
67.00	.13185215	-.07699145	.23321993	.71191937	1.00000000
	-.54999175J	.24251349J	.08605494J	.22142334J	.00000002
	.56557573M	.25444149M	.24858999M	.74555850M	
68.00	.16787621	-.10426578	.23865652	.69773300	.99999995
	-.57492087J	.23938508J	.09236432J	.24317152J	.00000005
	.59892940M	.26110643M	.25590643M	.73889357M	
69.00	.20740748	-.13317009	.24341219	.68235048	1.00000000
	-.59749104J	.23224543J	.09946979J	.26577581J	-.00000001
	.63246612M	.26771666M	.26295196M	.73228338M	
70.00	.25038433	-.16328023	.24735973	.66553622	1.00000000
	-.61703682J	.22049322J	.10740055J	.28914305J	.00000000
	.66590295M	.27436780M	.26966963M	.72563224M	
71.00	.29665007	-.19402645	.25034870	.64702775	1.00000000
	-.63282043J	.20350718J	.11616909J	.31314417J	.00000001
	.69890125M	.28117865M	.27598863M	.71882138M	
72.00	.34592837	-.22466598	.25220288	.62653475	1.00000000
	-.64403415J	.18066554J	.12576503J	.33760358J	.00000000
	.73105843M	.28829644M	.28182110M	.71170356M	
73.00	.39779139	-.25425184	.25271903	.60374134	.99999992
	-.64980593J	.15137337J	.13614723J	.36228531J	-.00000002
	.76189614M	.29590183M	.28705918M	.70409818M	
74.00	.45162213	-.28159954	.25166654	.57831075	.99999988
	-.64921222J	.11510244J	.14723364J	.38687603J	-.00000011
	.79084705M	.30421517M	.29157124M	.69578472M	
75.00	.50657183	-.30525471	.24878883	.54989400	.99999995
	-.64130077J	.07144604J	.15888895J	.41096590J	.00000012
	.81724029M	.31350434M	.29519752M	.68649572M	
76.00	.56151323	-.32346375	.24380756	.51814307	1.00000010
	-.62512667J	.02019272J	.17090915J	.43402486J	.00000006
	.84028593M	.32409341M	.29774496M	.67590666M	
77.00	.61498909	-.33415393	.23643166	.48273317	.99999999
	-.59980578J	-.03857613J	.18300398J	.45537801J	.00000008
	.85905677M	.33637324M	.29898225M	.66362673M	

78.00	.66515958	-.33492903	.22637158	.44339769	.99999982
	-.56459276J	-.10436086J	.19477607J	.47417746J	-.00000009
	.87246905M	.35081140M	.29863323M	.64918854M	
79.00	.70975956	-.32309693	.21336366	.39997378	1.00000000
	-.51898895J	-.17608702J	.20569960J	.48937638J	.00000001
	.87926569M	.36796502M	.29637202M	.63203501M	
80.00	.74607047	-.29574102	.19720332	.35246717	.99999994
	-.46288467J	-.25192112J	.21509852J	.49970730J	.00000003
	.87799964M	.38849324M	.29181590M	.61150674M	
81.00	.77092253	-.24986142	.17779540	.30114342	.99999993
	-.39674739J	-.32905382J	.22212939J	.50367194J	.00000012
	.86702366M	.41316720M	.28452182M	.58683282M	
82.00	.78075395	-.18261093	.15521968	.24663724	.99999994
	-.32184698J	-.40347958J	.22577377J	.49955275J	-.00000004
	.84448931M	.44287980M	.27398347M	.55712015M	
83.00	.77175009	-.09165660	.12981551	.19009114	1.00000010
	-.24051911J	-.46979106J	.22484907J	.48546117J	.00000007
	.80836108M	.47864869M	.25963276M	.52135131M	
84.00	.74010047	.02430716	.10228279	.13330954	.99999996
	-.15644268J	-.52104496J	.21804887J	.45943883J	.00000006
	.75645424M	.52161161M	.24084658M	.47838840M	
85.00	.68240760	.16487963	.07379414	.07891847	.99999984
	-.07489148J	-.54877333J	.20402850J	.41963623J	-.00000008
	.68650481M	.57300738M	.21696360M	.42699261M	
86.00	.59627585	.32712856	.04609936	.03049623	1.00000000
	-.00289017J	-.54324815J	.18155000J	.36458827J	-.00000005
	.59628285M	.63413850M	.18731138M	.36586149M	
87.00	.48107840	.50469473	.02159695	-.00737015	.99999990
	.05082628J	-.49412233J	.14969835J	.29359768J	-.00000002
	.48375586M	.70630988M	.15124821M	.29369017M	
88.00	.33885610	.68698003	.00333276	-.02916887	1.00000000
	.07617045J	-.39156340J	.10817186J	.20722112J	.00000003
	.34731166M	.79073602M	.10822318M	.20926398M	
89.00	.17521486	.85867998	-.00512783	-.02876701	1.00000000
	.06251029J	-.22794210J	.05762317J	.10780866J	.00000002
	.18603167M	.88841933M	.05785088M	.11158067M	
90.00	-.00000054	1.00000040	.00000004	.00000001	.99999995
	-.00000028J	.00000094J	-.00000024J	-.00000048J	-.00000007
	.00000061M	1.00000030M	.00000025M	.00000048M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	.700

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.05152624	.00000000	.94847382	1.00000000
1.00	.00013410	.05137761	.00000996	.94847824	.99999992
2.00	.00053487	.05093333	.00003985	.94849191	.99999996
3.00	.00119758	.05019794	.00008969	.94851454	.99999975
4.00	.00211444	.04917915	.00015949	.94854677	.99999986
5.00	.00327463	.04788771	.00024928	.94858834	.99999996
6.00	.00466433	.04633707	.00035909	.94863948	.99999998
7.00	.00626688	.04454373	.00048897	.94870015	.99999973
8.00	.00806285	.04252677	.00063893	.94877146	1.00000000
9.00	.01003023	.04030784	.00080900	.94885276	.99999984
10.00	.01214452	.03791098	.00099920	.94894519	.99999989
11.00	.01437898	.03536250	.00120952	.94904883	.99999983
12.00	.01670478	.03269065	.00143991	.94916451	.99999985
13.00	.01909124	.02992555	.00169030	.94929290	1.00000000
14.00	.02150601	.02709880	.00196055	.94943442	.99999979
15.00	.02391542	.02424338	.00225045	.94959051	.99999978
16.00	.02628465	.02139328	.00255969	.94976216	.99999979
17.00	.02857804	.01858324	.00288781	.94995077	.99999986
18.00	.03075939	.01584843	.00323421	.95015785	.99999989
19.00	.03279224	.01322415	.00359802	.95038556	.99999998
20.00	.03464023	.01074551	.00397811	.95063599	.99999985
21.00	.03626735	.00844703	.00437294	.95091261	.99999994

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22.00	.03763835	.00636230	.00478044	.95121879	.99999989
23.00	.03871903	.00452361	.00519783	.95155938	.99999986
24.00	.03947655	.00296144	.00562138	.95194039	.99999978
25.00	.03987979	.00170413	.00604599	.95236988	.99999980
26.00	.03989959	.00077727	.00646468	.95285834	.99999989
27.00	.03950898	.00020318	.00686767	.95342004	.99999988
28.00	.03868319	.00000020	.00724099	.95407551	.99999989
29.00	.03739940	.00018183	.00756404	.95485481	1.00000000
30.00	.03563546	.00075544	.00780524	.95580390	1.00000000
31.00	.03336663	.00172018	.00791326	.95699984	.99999992
32.00	.03055530	.00306285	.00779772	.95858409	.99999997
33.00	.02711565	.00474741	.00727875	.96085815	.99999997
34.00	.02273907	.00667607	.00591667	.96466803	.99999986
35.00	.01472569	.00835091	.00203751	.97488583	.99999995
35.25	.00508183	.00792192	.00000261	.98699351	.99999987

IMAGINARY

35.50	.01255732	.00880410	−.00588844	.98452699	.99999996
	.01682674J	.00198233J	.00202829J	−.02083737J	−.00000000
	.02099585M	.00902451M	.00622798M	.98474747M	
35.75	.02071481	.01024414	−.00821930	.97726023	.99999988
	.01581397J	.00265950J	.00844599J	−.02691946J	.00000000
	.02606118M	.01058373M	.01178523M	.97763091M	
36.00	.02485273	.01168719	−.00738552	.97084555	.99999994
	.01176509J	.00299655J	.01490666J	−.02966831J	−.00000000
	.02749682M	.01206522M	.01663594M	.97129875M	
37.00	.02009937	.01696374	.01009422	.95284257	.99999991
	−.00303871J	.00265563J	.02781728J	−.02743421J	.00000000
	.02032778M	.01717035M	.02959213M	.95323742M	
38.00	.00724475	.02088873	.02635143	.94551496	.99999987
	−.00476673J	.00125396J	.02053107J	−.01701830J	−.00000000
	.00867226M	.02092633M	.03340543M	.94566810M	
39.00	.00044394	.02321776	.02770189	.94863632	.99999993
	−.00064614J	.00011945J	.00491972J	−.00439302J	.00000000
	.00078396M	.02321807M	.02813536M	.94864648M	

IMAGINARY

40.00	-.00429272	.02295396	.00443313	.97690547	.99999984
	-.00562937J	.00244023J	.00783769J	-.00464855J	-.00000000
	.00707935M	.02308330M	.00900455M	.97691652M	
41.00	-.01230400	.02825040	.01321764	.97083603	1.00000000
	-.00158868J	.00600687J	.01898655J	-.02340475J	-.00000000
	.01240614M	.02888196M	.02313429M	.97111810M	
42.00	-.01716979	.03337653	.01877174	.96502140	.99999988
	-.00054829J	.00863869J	.02304400J	-.03113440J	.00000000
	.01717854M	.03447637M	.02972211M	.96552351M	
43.00	-.02170927	.03871534	.02401031	.95898358	.99999997
	-.00083774J	.01131220J	.02570526J	-.03617972J	.00000000
	.02172542M	.04033415M	.03517464M	.95966581M	
44.00	-.02620891	.04427228	.02924882	.95268783	1.00000000
	-.00213524J	.01417470J	.02764310J	-.03968256J	.00000000
	.02629574M	.04648609M	.04024468M	.95351392M	
45.00	-.03073504	.05001433	.03457198	.94614873	1.00000000
	-.00433199J	.01728900J	.02907161J	-.04202862J	.00000000
	.03103882M	.05291826M	.04517057M	.94708173M	
46.00	-.03529493	.05589471	.04000418	.93939612	1.00000000
	-.00739322J	.02069427J	.03008458J	-.04338564J	.00000000
	.03606094M	.05960261M	.05005414M	.94039745M	
47.00	-.03987236	.06185864	.04554806	.93246571	1.00000000
	-.01131732J	.02442051J	.03073260J	-.04383579J	.00000000
	.04144740M	.06650453M	.05494651M	.93349551M	
48.00	-.04443864	.06784522	.05119715	.92539611	.99999984
	-.01611956J	.02849319J	.03104833J	-.04342194J	.00000000
	.04727190M	.07358557M	.05987610M	.92641428M	
49.00	-.04895696	.07378819	.05694115	.91822773	1.00000010
	-.02182450J	.03293484J	.03105654J	-.04216688J	.00000000
	.05360124M	.08080470M	.06485988M	.91919540M	
50.00	-.05338429	.07961652	.06276855	.91099919	.99999996
	-.02846192J	.03776563J	.03077881J	-.04008253J	-.00000000
	.06049763M	.08811942M	.06990869M	.91188054M	
51.00	-.05767205	.08525452	.06866789	.90374954	.99999990
	-.03606406J	.04300309J	.03023581J	-.03717483J	.00000000
	.06801972M	.09548612M	.07502989M	.90451378M	
52.00	-.06176649	.09062209	.07462878	.89651562	1.00000000
	-.04466410J	.04866173J	.02944848J	-.03344612J	-.00000001
	.07622323M	.10286072M	.08022884M	.89713928M	
53.00	-.06560866	.09563474	.08064231	.88933154	.99999992
	-.05429508J	.05475245J	.02843860J	-.02889598J	-.00000000
	.08516133M	.11019906M	.08550986M	.88980085M	

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54.00	-.06913433	.10020351	.08670145	.88222940	1.00000000
	-.06498839J	.06128154J	.02722928J	-.02352244J	-.00000000
	.09488439M	.11745710M	.09087670M	.88254292M	
55.00	-.07227373	.10423536	.09280136	.87523693	.99999992
	-.07677354J	.06824998J	.02584498J	-.01732142J	-.00000000
	.10544036M	.12459161M	.09633304M	.87540831M	
55.25	-.07298949	.10514806	.09433233	.87350922	1.00000010
	-.07989346J	.07006018J	.02547461J	-.01564132J	.00000000
	.10821474M	.12635087M	.09771153M	.87364924M	
55.50	-.07367516	.10601959	.09586565	.87178996	1.00000000
	-.08308378J	.07189742J	.02509531J	-.01390893J	.00000001
	.11104478M	.12809914M	.09909590M	.87190090M	
55.75	-.07432946	.10684827	.09740129	.87008006	1.00000010
	-.08634455J	.07376134J	.02470760J	-.01212440J	-.00000001
	.11393090M	.12983561M	.10048620M	.87016453M	
56.00	-.07495113	.10763262	.09893928	.86837920	.99999997
	-.08967637J	.07565187J	.02431182J	-.01028733J	-.00000001
	.11687396M	.13155982M	.10188251M	.86844012M	
57.00	-.07708462	.11029364	.10511485	.86167636	1.00000020
	-.10371951J	.08347378J	.02265739J	-.00241164J	.00000002
	.12922761M	.13832049M	.10752901M	.86167973M	
58.00	-.07858537	.11211219	.11132977	.85514349	1.00000000
	-.11892002J	.09169256J	.02091110J	.00631635J	.00000000
	.14253993M	.14483324M	.11327661M	.85516681M	
59.00	-.07935736	.11297806	.11758794	.84879153	1.00000010
	-.13528955J	.10027433J	.01910426J	.01591097J	.00000002
	.15684658M	.15105953M	.11912974M	.84894063M	
60.00	-.07929661	.11277696	.12389517	.84262434	.99999986
	-.15283243J	.10917210J	.01727014J	.02639019J	.00000000
	.17217928M	.15696238M	.12509304M	.84303749M	
61.00	-.07829064	.11139099	.13025882	.83664099	1.00000010
	-.17154440J	.11832367J	.01544440J	.03777635J	.00000003
	.18856538M	.16250675M	.13117122M	.83749340M	
62.00	-.07621774	.10869917	.13668761	.83083096	1.00000000
	-.19141197J	.12764945J	.01366508J	.05009742J	-.00000000
	.20602836M	.16766004M	.13736898M	.83233997M	
63.00	-.07294642	.10457841	.14319126	.82517682	1.00000000
	-.21240896J	.13704911J	.01197354J	.06338633J	.00000003
	.22458572M	.17239229M	.14369099M	.82760775M	
64.00	-.06833465	.09890457	.14977945	.81965062	.99999998
	-.23449525J	.14639823J	.01041441J	.07768262J	.00000002
	.24424914M	.17667641M	.15014108M	.82332358M	

65.00	-.06222931	.09155468	.15646183	.81421283	1.00000000
	-.25761377J	.15554483J	.00903660J	.09303235J	.00000001
	.26502328M	.18048948M	.15672257M	.81951054M	
66.00	-.05446573	.08240935	.16324650	.80880992	1.00000000
	-.28168683J	.16430438J	.00789373J	.10948874J	.00000002
	.28690413M	.18381303M	.16343723M	.81618703M	
67.00	-.04486738	.07135674	.17013915	.80337151	1.00000000
	-.30661194J	.17245492J	.00704507J	.12711190J	-.00000005
	.30987733M	.18663462M	.17028494M	.81336536M	
68.00	-.03324628	.05829773	.17714128	.79780729	1.00000000
	-.33225630J	.17973090J	.00655655J	.14596887J	.00000002
	.33391549M	.18894925M	.17726257M	.81105078M	
69.00	-.01940348	.04315326	.18424876	.79200153	1.00000000
	-.35845074J	.18581678J	.00650131J	.16613261J	-.00000004
	.35897551M	.19076183M	.18436342M	.80923819M	
70.00	-.00313077	.02587407	.19144865	.78580812	1.00000000
	-.38498138J	.19033956J	.00696106J	.18768078J	.00000002
	.38499410M	.19209012M	.19157516M	.80790993M	
71.00	.01578581	.00645424	.19871618	.77904366	.99999990
	-.41157921J	.19286020J	.00802682J	.21069212J	-.00000007
	.41188182M	.19296816M	.19887822M	.80703170M	
72.00	.03756129	-.01505040	.20601088	.77147829	1.00000000
	-.43790911J	.19286679J	.00979947J	.23524283J	-.00000002
	.43951705M	.19345312M	.20624381M	.80654691M	
73.00	.06240360	-.03849859	.21327037	.76282458	.99999996
	-.46355433J	.18976532J	.01239013J	.26139889J	.00000001
	.46773585M	.19363113M	.21362997M	.80636884M	
74.00	.09050051	-.06362995	.22040376	.75272552	.99999984
	-.48799913J	.18287461J	.01591940J	.28920511J	-.00000001
	.49631994M	.19362823M	.22097792M	.80637168M	
75.00	.12200039	-.09002184	.22728227	.74073907	.99999989
	-.51060720J	.17142306J	.02051556J	.31866853J	-.00000005
	.52497980M	.19362281M	.22820630M	.80637708M	
76.00	.15698425	-.11703178	.23372750	.72632010	1.00000000
	-.53059837J	.15455380J	.02631007J	.34973450J	.00000000
	.55333414M	.19386416M	.23520366M	.80613591M	
77.00	.19542526	-.14372251	.23949736	.70879993	1.00000000
	-.54702268J	.13134188J	.03342974J	.38225103J	-.00000003
	.58088281M	.19469681M	.24181921M	.80530316M	
78.00	.23712594	-.16876429	.24426782	.68737051	.99999998
	-.55873147J	.10083144J	.04198361J	.41591644J	.00000002
	.60696751M	.19659187M	.24784953M	.80340818M	

79.00	.28163419	-.19031300	.24761241	.66106642	1.00000000
	-.56435495J	.06210967J	.05204002J	.45020534J	.00000008
	.63072523M	.20019153M	.25302187M	.79980851M	
80.00	.32812220	-.20586202	.24897874	.62876109	1.00000000
	-.56229003J	.01443311J	.06359223J	.48426467J	-.00000002
	.65102554M	.20636735M	.25697156M	.79363264M	
81.00	.37521576	-.21206965	.24766571	.58918816	.99999998
	-.55071284J	-.04255695J	.07650400J	.51676581J	.00000002
	.66638689M	.21629754M	.25921258M	.78370248M	
82.00	.42076870	-.20458334	.24280771	.54100687	.99999994
	-.52764386J	-.10849103J	.09042779J	.54570714J	.00000004
	.67487357M	.23156996M	.25909992M	.76843002M	
83.00	.46156624	-.17789856	.23337689	.48295549	1.00000000
	-.49110545J	-.18173640J	.10468651J	.56815529J	-.00000005
	.67396435M	.25431479M	.25578123M	.74568521M	
84.00	.49296416	-.12534179	.21822661	.41415096	.99999994
	-.43943836J	-.25859696J	.11810698J	.57992840J	.00000006
	.66039361M	.28737249M	.24813728M	.71262751M	
85.00	.50849872	-.03934622	.19621651	.33463094	.99999995
	-.37188143J	-.33217400J	.12880120J	.57525433J	.00000010
	.62997361M	.33449617M	.23471401M	.66550387M	
86.00	.49957319	.08768531	.16647834	.24626323	1.00000000
	-.28954392J	-.39086255J	.13390675J	.54649971J	-.00000001
	.57741583M	.40057738M	.21364937M	.59942263M	
87.00	.45545412	.26146054	.12891601	.15416929	.99999996
	-.19692329J	-.41660792J	.12934047J	.48419079J	.00000005
	.49620282M	.49185746M	.18261515M	.50814258M	
88.00	.36403519	.48218526	.08503892	.06874064	1.00000000
	-.10404014J	-.38341613J	.10970406J	.37775222J	.00000001
	.37861057M	.61604427M	.13880417M	.38395573M	
89.00	.21409884	.73864356	.03918592	.00807172	1.00000000
	-.02898508J	-.25731222J	.06862584J	.21767149J	.00000003
	.21605195M	.78217893M	.07902558M	.21782109M	
90.00	-.00000074	1.00000080	-.00000010	-.00000013	.99999990
	-.00000000J	.00000119J	-.00000031J	-.00000098J	-.00000011
	.00000074M	1.00000070M	.00000033M	.00000099M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	.800

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.07955294	.00000000	.92044709	1.00000000
1.00	.00021679	.07928824	.00006304	.92043174	.99999982
2.00	.00086398	.07849737	.00025225	.92038631	.99999991
3.00	.00193204	.07718999	.00056780	.92031002	.99999987
4.00	.00340520	.07538233	.00101003	.92020219	.99999976
5.00	.00526158	.07309668	.00157938	.92006230	.99999995
6.00	.00747345	.07036139	.00227644	.91988858	.99999987
7.00	.01000748	.06721060	.00310189	.91967987	.99999985
8.00	.01282504	.06368391	.00405658	.91943424	.99999979
9.00	.01588270	.05982589	.00514147	.91914976	.99999983
10.00	.01913256	.05568584	.00635762	.91882401	1.00000000
11.00	.02252284	.05131714	.00770625	.91845365	.99999989
12.00	.02599842	.04677683	.00918867	.91803585	.99999977
13.00	.02950143	.04212495	.01080630	.91756714	.99999983
14.00	.03297193	.03742396	.01256069	.91704314	.99999973
15.00	.03634863	.03273812	.01445346	.91645950	.99999972
16.00	.03956963	.02813267	.01648634	.91581118	.99999984
17.00	.04257320	.02367318	.01866109	.91509228	.99999977
18.00	.04529862	.01942479	.02097954	.91429678	.99999974
19.00	.04768711	.01545133	.02344350	.91341787	.99999982
20.00	.04968261	.01181457	.02605473	.91244790	.99999982

21.00	.05123288	.00857332	.02881482	.91137900	1.00000000
22.00	.05229036	.00578263	.03172517	.91020173	.99999990
23.00	.05281319	.00349280	.03478663	.90890723	.99999986
24.00	.05276624	.00174852	.03799934	.90748566	.99999977
25.00	.05212210	.00058795	.04136222	.90592747	.99999975
26.00	.05086214	.00004171	.04487213	.90422368	.99999967
27.00	.04897746	.00013191	.04852263	.90236788	.99999989
28.00	.04646960	.00087104	.05230153	.90035778	.99999996
29.00	.04335120	.00226073	.05618647	.89820151	.99999991
30.00	.03964547	.00429024	.06013617	.89592799	.99999987
31.00	.03538362	.00693420	.06407132	.89361073	.99999989
32.00	.03059589	.01014853	.06782835	.89142712	.99999990
33.00	.02527888	.01386042	.07102543	.88983516	.99999991
34.00	.01924483	.01793115	.07254005	.89028376	.99999979
35.00	.01048251	.02182664	.06611291	.90157778	.99999986
35.25	.00318572	.02196365	.05349703	.92135355	.99999996

IMAGINARY

35.50	.00578515	.02345455	.05482919	.91593106	.99999996
	.01138242J	.00195713J	.02381884J	-.03715840J	.00000000
	.01276823M	.02353606M	.05977941M	.91668448M	
35.75	.01000344	.02544590	.06297199	.90157873	1.00000000
	.01255665J	.00256417J	.03389595J	-.04901677J	.00000000
	.01605423M	.02557477M	.07151508M	.90291021M	
36.00	.01261955	.02739845	.07177186	.88821008	.99999994
	.01166201J	.00284804J	.04073747J	-.05524752J	.00000000
	.01718300M	.02754607M	.08252722M	.88992664M	
37.00	.01307633	.03463050	.10875032	.84354280	.99999995
	.00441829J	.00257032J	.05023585J	-.05722447J	.00000001
	.01380260M	.03472575M	.11979262M	.84548157M	
38.00	.00723015	.04075488	.14145328	.81056159	.99999991
	.00028470J	.00146097J	.04176537J	-.04351105J	-.00000000
	.00723576M	.04078106M	.14749025M	.81172858M	

39.00	.00205207	.04580078	.16570081	.78644629	.99999995
	-.00037165J	.00044631J	.02372506J	-.02379973J	-.00000000
	.00208545M	.04580295M	.16739066M	.78680632M	
40.00	.00001048	.04993137	.18109017	.76896793	.99999995
	-.00000386J	.00000249J	.00175307J	-.00175170J	.00000000
	.00001117M	.04993137M	.18109865M	.76896992M	
41.00	.00141132	.05331469	.18882309	.75645104	1.00000010
	-.00076226J	.00037036J	-.02058861J	.02098051J	.00000000
	.00160402M	.05331598M	.18994222M	.75674193M	
42.00	.00571471	.05607308	.19054687	.74766537	1.00000000
	-.00401505J	.00165401J	-.04127101J	.04363206J	.00000000
	.00698416M	.05609747M	.19496514M	.74893742M	
43.00	.01218063	.05827189	.18782845	.74171907	1.00000000
	-.01047170J	.00387971J	-.05927936J	.06587135J	.00000000
	.01606314M	.05840090M	.19696083M	.74463830M	
44.00	.02014270	.05992367	.18196449	.73796911	.99999998
	-.02040299J	.00703042J	-.07421414J	.08758670J	-.00000000
	.02867072M	.06033468M	.19651670M	.74314859M	
45.00	.02909787	.06099711	.17394881	.73595629	1.00000000
	-.03382396J	.01106438J	-.08601967J	.10877926J	.00000001
	.04461778M	.06199248M	.19405559M	.74395200M	
46.00	.03871476	.06142549	.16450102	.73535869	.99999997
	-.05062024J	.01592442J	-.09481196J	.12950780J	.00000001
	.06372787M	.06345611M	.18986809M	.74667574M	
47.00	.04881094	.06111364	.15411389	.73596173	1.00000020
	-.07062750J	.02154148J	-.10077354J	.14985957J	.00000002
	.08585308M	.06479902M	.18413689M	.75106428M	
48.00	.05932309	.05994147	.14309612	.73763928	.99999997
	-.09368091J	.02783514J	-.10409010J	.16993588J	.00000001
	.11088437M	.06608915M	.17694984M	.75696096M	
49.00	.07027846	.05776543	.13160570	.74035038	.99999997
	-.11964772J	.03471221J	-.10490980J	.18984528J	-.00000003
	.13876108M	.06739274M	.16830367M	.76430355M	
50.00	.08177168	.05441539	.11966751	.74414544	1.00000000
	-.14845573J	.04206438J	-.10331115J	.20970249J	-.00000001
	.16948661M	.06877825M	.15809334M	.77312843M	
51.00	.09394612	.04968490	.10716981	.74919926	1.00000010
	-.18013222J	.04976489J	-.09926397J	.22963130J	.00000000
	.20315878M	.07032164M	.14607773M	.78360070M	
52.00	.10697907	.04330686	.09382508	.75588904	1.00000000
	-.21487883J	.05766430J	-.09255964J	.24977415J	-.00000002
	.24003631M	.07211557M	.13179694M	.79608753M	

53.00	.12106692	.03488976	.07904413	.76499921	1.00000000
	-.25325646J	.06558489J	-.08264379J	.27031534J	-.00000002
	.28070631M	.07428778M	.11435895M	.81135329M	
54.00	.13639464	.02371481	.06151737	.77837316	.99999998
	-.29677128J	.07331300J	-.06808982J	.29154811J	.00000001
	.32661397M	.07705316M	.09176388M	.83118294M	
55.00	.15295557	.00766219	.03698720	.80239492	.99999988
	-.35101377J	.08060185J	-.04378548J	.31419735J	-.00000005
	.38289172M	.08096522M	.05731685M	.86171780M	
55.25	.15713875	.00186979	.02766293	.81332865	1.00000010
	-.36917405J	.08233959J	-.03354908J	.32038355J	.00000001
	.40122569M	.08236081M	.04348308M	.87415622M	
55.50	.16086678	-.00673668	.01270293	.83316698	1.00000000
	-.39542358J	.08411291J	-.01603039J	.32734103J	-.00000003
	.42689334M	.08438225M	.02045331M	.89516443M	

IMAGINARY

55.75	.13486435	-.01392192	.02730151	.85175598	.99999992
	-.41572510J	.09579728J	.01946922J	.30045853J	-.00000007
	.43705348M	.09680361M	.03353242M	.90319630M	
56.00	.12486796	-.01547916	.04174476	.84886656	1.00000010
	-.41917876J	.10247839J	.02880192J	.28789840J	-.00000005
	.43738178M	.10364084M	.05071662M	.89635925M	
57.00	.11342418	-.02364480	.07469580	.83552483	1.00000000
	-.43696021J	.12007437J	.04834412J	.26854168J	-.00000004
	.45144132M	.12238026M	.08897537M	.87761971M	
58.00	.11658723	-.03407617	.09611770	.82137121	.99999997
	-.45726431J	.13297301J	.06037342J	.26391785J	-.00000003
	.47189324M	.13726982M	.11350578M	.86273013M	
59.00	.12686050	-.04652993	.11292032	.80674908	.99999997
	-.47871780J	.14333519J	.06992247J	.26546012J	-.00000002
	.49524166M	.15069841M	.13281623M	.84930156M	
60.00	.14229185	-.06091450	.12695843	.79166414	.99999992
	-.50064524J	.15151808J	.07833678J	.27079034J	-.00000004
	.52047346M	.16330433M	.14918141M	.83669558M	
61.00	.16206520	-.07714889	.13902321	.77606044	.99999996
	-.52252301J	.15749088J	.08621049J	.27882162J	-.00000002
	.54707898M	.17537197M	.16358393M	.82462797M	
62.00	.18575868	-.09512919	.14951392	.75985648	.99999989
	-.54387102J	.16106943J	.09386728J	.28893423J	-.00000008
	.57471903M	.18706395M	.17653747M	.81293594M	

63.00	.21310978	-.11471057	.15864491	.74295579	.99999991
	-.56421311J	.16198899J	.10150463J	.30071937J	-.00000012
	.60311872M	.19849168M	.18833851M	.80150822M	
64.00	.24391752	-.13569527	.16652855	.72524927	1.00000000
	-.58306081J	.15993599J	.10924995J	.31387490J	.00000003
	.63202504M	.20974443M	.19916653M	.79025562M	
65.00	.27799143	-.15782150	.17321421	.70661583	.99999997
	-.59990605J	.15456636J	.11718526J	.32815438J	-.00000005
	.66118567M	.22090356M	.20913045M	.77909641M	
66.00	.31511827	-.18075241	.17870930	.68692481	.99999997
	-.61421720J	.14551946J	.12535961J	.34333802J	-.00000011
	.69033491M	.23205031M	.21829348M	.76794966M	
67.00	.35503810	-.20406497	.18299055	.66603630	.99999998
	-.62543985J	.13243137J	.13379399J	.35921440J	-.00000009
	.71918499M	.24327059M	.22668562M	.75672937M	
68.00	.39742469	-.22723944	.18601177	.64380295	.99999997
	-.63300095J	.11494991J	.14248364J	.37556736J	-.00000004
	.74741994M	.25465907M	.23431168M	.74534091M	
69.00	.44186758	-.24964871	.18770909	.62007208	1.00000000
	-.63631536J	.09275168J	.15139761J	.39216600J	-.00000007
	.77468974M	.26632189M	.24115542M	.73367809M	
70.00	.48785413	-.27054881	.18800534	.59468937	1.00000000
	-.63479590J	.06556337J	.16047757J	.40875492J	-.00000004
	.80060444M	.27837962M	.24718223M	.72162041M	
71.00	.53475238	-.28907026	.18681418	.56750375	1.00000000
	-.62786814J	.03318671J	.16963495J	.42504640J	-.00000008
	.82472935M	.29096902M	.25234015M	.70903099M	
72.00	.58179601	-.30421381	.18404487	.53837299	1.00000000
	-.61498982J	-.00447038J	.17874795J	.44071226J	.00000001
	.84658081M	.30424665M	.25656060M	.69575339M	
73.00	.62806925	-.31484896	.17960755	.50717213	.99999997
	-.59567592J	-.04735804J	.18765762J	.45537628J	-.00000006
	.86562161M	.31839071M	.25975806M	.68160922M	
74.00	.67249375	-.31971925	.17342026	.47380519	.99999995
	-.56952986J	-.09524171J	.19616427J	.46860724J	-.00000006
	.88125597M	.33360362M	.26183011M	.66639636M	
75.00	.71382138	-.31745644	.16541723	.43821769	.99999986
	-.53628251J	-.14765380J	.20402351J	.47991266J	-.00000014
	.89282690M	.35011459M	.26265653M	.64988529M	
76.00	.75063250	-.30660660	.15555951	.40041459	1.00000000
	-.49583892J	-.20383972J	.21094379J	.48873485J	.00000000
	.89961401M	.36818233M	.26209930M	.63181768M	

77.00	.78134382	-.28567111	.14384771	.36047966	1.00000000
	-.44833212J	-.26270072J	.21658447J	.49444830J	-.00000007
	.90083287M	.38809747M	.26000191M	.61190253M	
78.00	.80422632	-.25316623	.13033739	.31860244	.99999992
	-.39418508J	-.32273429J	.22055664J	.49636270J	-.00000003
	.89563488M	.41018356M	.25618951M	.58981644M	
79.00	.81744394	-.20770727	.11515732	.27510606	1.00000000
	-.33417872J	-.38197853J	.22242741J	.49372994J	.00000010
	.88311382M	.43479870M	.25046988M	.56520137M	
80.00	.81911062	-.14811674	.09852867	.23047744	.99999999
	-.26951897J	-.43796851J	.22172803J	.48575938J	-.00000007
	.86231240M	.46233643M	.24263391M	.53766349M	
81.00	.80737255	-.07356520	.08078721	.18540550	1.00000000
	-.20190741J	-.48770581J	.21796947J	.47164376J	.00000001
	.83223616M	.49322286M	.23245916M	.50677710M	
82.00	.78052280	.01626191	.06240405	.14081125	1.00000000
	-.13359511J	-.52766452J	.21066410J	.45059554J	.00000001
	.79187340M	.52791504M	.21971260M	.47208488M	
83.00	.73714396	.12097012	.04400485	.09788107	1.00000000
	-.06742061J	-.55383724J	.19935788J	.42189999J	.00000002
	.74022074M	.56689457M	.20415678M	.43310541M	
84.00	.67628469	.23924529	.02638301	.05808694	.99999993
	-.00681106J	-.56184270J	.18367119J	.38498260J	.00000003
	.67631898M	.61065990M	.18555637M	.38934006M	
85.00	.59765890	.36864142	.01050410	.02319559	1.00000000
	.04426089J	-.54710674J	.16335115J	.33949475J	.00000005
	.59929556M	.65971378M	.16368852M	.34028623M	
86.00	.50186032	.50539220	-.00250497	-.00474761	1.00000000
	.08138888J	-.50513205J	.13833122J	.28541191J	-.00000004
	.50841708M	.71454857M	.13835389M	.28545139M	
87.00	.39057048	.64427808	-.01138522	-.02346333	1.00000000
	.09991948J	-.43185918J	.10879651J	.22314321J	.00000002
	.40314910M	.77562657M	.10939060M	.22437339M	
88.00	.26673182	.77858977	-.01479959	-.03052198	1.00000010
	.09522526J	-.32411353J	.07524806J	.15364025J	.00000004
	.28322025M	.84335734M	.07668963M	.15664264M	
89.00	.13465187	.90023125	-.01141320	-.02346991	1.00000000
	.06306315J	-.18011410J	.03855729J	.07849366J	.00000000
	.14868788M	.91807264M	.04021102M	.08192736M	
90.00	-.00000034	1.00000020	.00000005	-.00000007	.99999988
	-.00000022J	.00000067J	-.00000017J	-.00000036J	-.00000008
	.00000041M	1.00000010M	.00000018M	.00000037M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	.800

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.04818561	.00000000	.95181440	1.00000000
1.00	.00012920	.04802924	.00003040	.95181105	.99999990
2.00	.00051500	.04756199	.00012165	.95180117	.99999981
3.00	.00115188	.04678933	.00027387	.95178471	.99999980
4.00	.00203076	.04572048	.00048728	.95176133	.99999986
5.00	.00313900	.04436816	.00076217	.95173042	.99999976
6.00	.00446056	.04274851	.00109893	.95169203	1.00000000
7.00	.00597613	.04088101	.00149802	.95164469	.99999986
8.00	.00766330	.03878832	.00196001	.95158832	.99999995
9.00	.00949679	.03649595	.00248551	.95152169	.99999995
10.00	.01144863	.03403221	.00307527	.95144392	1.00000000
11.00	.01348850	.03142784	.00373009	.95135351	.99999995
12.00	.01558398	.02871582	.00445085	.95124923	.99999989
13.00	.01770087	.02593093	.00523855	.95112955	.99999990
14.00	.01980355	.02310954	.00609422	.95099253	.99999985
15.00	.02185540	.02028925	.00701901	.95083623	.99999990
16.00	.02381912	.01750845	.00801412	.95065816	.99999985
17.00	.02565724	.01480595	.00908080	.95045591	.99999991
18.00	.02733254	.01222062	.01022040	.95022625	.99999981
19.00	.02880853	.00979083	.01143425	.94996622	.99999984
20.00	.03005000	.00755413	.01272371	.94967198	.99999984

21.00	.03102354	.00554670	.01409014	.94933943	.99999982
22.00	.03169807	.00380285	.01553478	.94896407	.99999978
23.00	.03204552	.00235456	.01705871	.94854114	.99999994
24.00	.03204144	.00123092	.01866273	.94806475	.999999=4
25.00	.03166561	.00045754	.02034708	.94752959	.99999983
26.00	.03090287	.00005603	.02211114	.94692982	.99999987
27.00	.02974378	.00004332	.02395278	.94626010	.99999999
28.00	.02818539	.00043100	.02586730	.94551624	.99999994
29.00	.02623199	.00122453	.02784523	.94469813	.99999989
30.00	.02389549	.00242229	.02986817	.94381408	1.00000000
31.00	.02119509	.00401426	.03189945	.94289113	.99999993
32.00	.01815394	.00597994	.03386065	.94200530	.99999985
33.00	.01478495	.00828370	.03556247	.94136892	1.00000000
34.00	.01101705	.01085887	.03642653	.94169733	.99999979
35.00	.00584056	.01346850	.03306811	.94762284	1.00000000
35.25	.00178182	.01377256	.02612727	.95831830	.99999996

IMAGINARY

35.50	.00337672	.01469957	.02704833	.95487540	1.00000000
	.00616042J	.00085210J	.01339267J	-.02040519J	.00000000
	.00702517M	.01472424M	.03018238M	.95509339M	
35.75	.00565133	.01583851	.03196464	.94654542.	.99999990
	.00647521J	.00108226J	.01903959J	-.02659707J	.00000000
	.00859452M	.01587544M	.03720543M	.94691901M	
36.00	.00687182	.01694810	.03735066	.93882947	1.00000000
	.00567876J	.00116122J	.02271896J	-.02955895J	-.00000000
	.00891461M	.01698783M	.04371754M	.93929468M	
37.00	.00575270	.02101816	.05968898	.91354011	.99999996
	.00140420J	.00085867J	.02572262J	-.02798549J	.00000000
	.00592160M	.02103569M	.06499560M	.91396865M	
38.00	.00197290	.02444794	.07772381	.89585546	1.00000010
	-.00014191J	.00030928J	.01686654J	-.01703391J	-.00000000
	.00197800M	.02444990M	.07953283M	.89601738M	

39.00	.00003596	.02728610	.08844721	.88423079	1.00000000
	-.00001164J	.00000624J	.00240546J	-.00240006J	-.00000000
	.00003780M	.02728610M	.08847991M	.88423404M	
40.00	.00106757	.02962359	.09184114	.87746756	.99999987
	-.00059743J	.00021056J	-.01331297J	.01369984J	.00000000
	.00122337M	.02962434M	.09280102M	.87757449M	
41.00	.00470080	.03153053	.08904048	.87472834	1.00000010
	-.00377104J	.00107026J	-.02753483J	.03023561J	.00000000
	.00602646M	.03154869M	.09320072M	.87525074M	
42.00	.01005430	.03302894	.08138932	.87552744	1.00000000
	-.01076734J	.00267952J	-.03862578J	.04671360J	.00000000
	.01473176M	.03313746M	.09008980M	.87677275M	
43.00	.01614790	.03407651	.07000514	.87977052	1.00000000
	-.02246731J	.00512184J	-.04555862J	.06290410J	.00000000
	.02766830M	.03445927M	.08352429M	.88201649M	
44.00	.02197409	.03453512	.05554538	.88794541	1.00000000
	-.03984541J	.00851923J	-.04737313J	.07869931J	-.00000000
	.04550294M	.03557038M	.07300344M	.89142617M	
45.00	.02617942	.03405306	.03782082	.90194665	.99999995
	-.06495961J	.01315481J	-.04219315J	.09399795J	.00000000
	.07003651M	.03650561M	.05666283M	.90683150M	
46.00	.02394318	.03106652	.01271501	.93227542	1.00000010
	-.10793589J	.02042284J	-.02069367J	.10820671J	-.00000001
	.11055962M	.03717824M	.02428785M	.93853404M	

IMAGINARY

46.25	.00328605	.02981545	.01156710	.95533139	.99999999
	-.12840431J	.02633398J	.00529952J	.09677079J	-.00000001
	.12844635M	.03977989M	.01272331M	.96022009M	
46.50	-.01045550	.03261690	.02546974	.95236883.	.99999997
	-.12314100J	.02964025J	.01109647J	.08240425J	-.00000001
	.12358407M	.04407275M	.02778200M	.95592722M	
46.75	-.01768878	.03448623	.03324805	.94995441	.99999991
	-.12128731J	.03203940J	.01403347J	.07521441J	-.00000001
	.12257040M	.04707253M	.03608838M	.95292737M	
47.00	-.02290447	.03605167	.03913465	.94771801	.99999986
	-.12060012J	.03417568J	.01609592J	.07032851J	.00000000
	.12275587M	.04967595M	.04231548M	.95032390M	
48.00	-.03613979	.04103283	.05566149	.93944534	.99999987
	-.12294631J	.04189668J	.02109277J	.05995685J	-.00000000
	.12814788M	.05864320M	.05952400M	.94135666M	

49.00	-.04434259	.04494504	.06782492	.93157263	1.00000000
	-.12944705J	.04933669J	.02400760J	.05610275J	-.00000000
	.13683130M	.06673954M	.07194849M	.93326045M	
50.00	-.05019519	.04810931	.07825589	.92383000	1.00000000
	-.13846038J	.05688569J	.02602806J	.05554660J	-.00000001
	.14727808M	.07450159M	.08247087M	.92549840M	
51.00	-.05449049	.05056816	.08778805	.91613424	.99999996
	-.14941444J	.06465356J	.02754165J	.05721919J	-.00000003
	.15904052M	.08208058M	.09200698M	.91791937M	
52.00	-.05752766	.05228765	.09678727	.90845291	1.00000010
	-.16203373J	.07267031J	.02873474J	.06062867J	-.00000000
	.17194290M	.08952637M	.10096267M	.91047378M	
53.00	-.05941441	.05320259	.10544109	.90077065	.99999993
	-.17615855J	.08092871J	.02971995J	.06550984J	-.00000003
	.18590832M	.09685026M	.10954952M	.90314965M	
54.00	-.06016667	.05323247	.11385456	.89307960	.99999996
	-.19168094J	.08939769J	.03057746J	.07170577J	-.00000001
	.20090199M	.10404635M	.11788910M	.89595361M	
55.00	-.05974950	.05228864	.12208969	.88537105	.99999989
	-.20851662J	.09802698J	.03137165J	.07911797J	-.00000001
	.21690823M	.11110081M	.12605582M	.88889906M	
56.00	-.05809661	.05027848	.13018371	.87763442	1.00000000
	-.22658972J	.10674839J	.03215891J	.08768240J	-.00000001
	.23391904M	.11799637M	.13409695M	.88200361M	
57.00	-.05512059	.04710831	.13815879	.86985333	.99999984
	-.24582453J	.11547593J	.03299154J	.09735701J	-.00000004
	.25192852M	.12471520M	.14204327M	.87528463M	
58.00	-.05071908	.04268598	.14602692	.86200612	.99999995
	-.26613849J	.12410458J	.03391995J	.10811392J	-.00000004
	.27092825M	.13124039M	.14991472M	.86875955M	
59.00	-.04477831	.03692326	.15379256	.85406243	.99999995
	-.28743874J	.13250928J	.03499394J	.11993551J	-.00000001
	.29090569M	.13755739M	.15772358M	.86244254M	
60.00	-.03717620	.02973857	.16145417	.84598334	.99999989
	-.30961788J	.14054311J	.03626336J	.13281138J	-.00000003
	.31184179M	.14365496M	.16547652M	.85634494M	
61.00	-.02778477	.02106017	.16900474	.83771987	1.00000000
	-.33254993J	.14803549J	.03777860J	.14673581J	-.00000003
	.33370863M	.14952603M	.17317570M	.85047396M	
62.00	-.01647200	.01082966	.17643167	.82921061	.99999994
	-.35608831J	.15479063J	.03959076J	.16170686J	-.00000006
	.35646907M	.15516900M	.18081914M	.84483095M	

63.00	-.00310480	-.00099354	.18371649	.82038172	.99999986
	-.38006095J	.16058515J	.04175181J	.17772398J	-.00000001
	.38007362M	.16058822M	.18840106M	.83941168M	
64.00	.01244836	-.01442690	.19083390	.81114461	.99999997
	-.40426717J	.16516653J	.04431437J	.19478629J	.00000002
	.40445877M	.16579541M	.19591156M	.83420457M	
65.00	.03031412	-.02945854	.19775093	.80139356	1.00000000
	-.42847437J	.16825174J	.04733149J	.21289118J	.00000004
	.42954537M	.17081116M	.20333642M	.82918893M	
66.00	.05061021	-.04603970	.20442543	.79100400	.99999994
	-.45241349J	.16952580J	.05085609J	.23203157J	-.00000003
	.45523549M	.17566630M	.21065635M	.82433365M	
67.00	.07343921	-.06407506	.21080458	.77983128	1.00000000
	-.47577427J	.16864137J	.05494026J	.25219263J	-.00000001
	.48140883M	.18040378M	.21784628M	.81959621M	
68.00	.09888258	-.08341214	.21682277	.76770678	.99999999
	-.49820135J	.16521940J	.05963406J	.27334794J	.00000005
	.50791962M	.18508115M	.22487404M	.81491888M	
69.00	.12699181	-.10382792	.22240008	.75443614	1.00000010
	-.51928954J	.15885114J	.06498374J	.29545464J	-.00000002
	.53459194M	.18977334M	.23169955M	.81022671M	
70.00	.15777812	-.12501347	.22743897	.73979641	1.00000000
	-.53857960J	.14910248J	.07102966J	.31844746J	.00000000
	.56121468M	.19457625M	.23827231M	.80542380M	
71.00	.19119778	-.14655512	.23182282	.72353457	1.00000000
	-.55555362J	.13552109J	.07780295J	.34222954J	-.00000004
	.58753417M	.19961054M	.24453040M	.80038948M	
72.00	.22713688	-.16791402	.23541235	.70536486	1.00000000
	-.56963315J	.11764830J	.08532159J	.36666325J	-.00000001
	.61324798M	.20502741M	.25039718M	.79497265M	
73.00	.26539000	-.18840179	.23804373	.68496806	1.00000000
	-.58017781J	.09503633J	.09358453J	.39155699J	.00000004
	.63799540M	.21101454M	.25577896M	.78898550M	
74.00	.30563437	-.20715371	.23952599	.66199329	.99999994
	-.58648707J	.06727361J	.10256474J	.41664871J	-.00000001
	.66134668M	.21780357M	.26056136M	.78219643M	
75.00	.34739919	-.22310023	.23963968	.63606132	.99999996
	-.58780675J	.03402045J	.11219965J	.44158660J	-.00000005
	.68279058M	.22567920M	.26460524M	.77432081M	
76.00	.39002975	-.23493834	.23813640	.60677223	1.00000000
	-.58334260J	-.00494165J	.12237930J	.46590504J	.00000009
	.70172059M	.23499030M	.26774173M	.76500983M	

77.00	.43264517	-.24110540	.23474131	.57371899	1.00000000
	-.57228379J	-.04964342J	.13293168J	.48899551J	-.00000002
	.71741938M	.24616312M	.26976714M	.75383691M	
78.00	.47408772	-.23975861	.22915790	.53651284	.99999985
	-.55383867J	-.09983934J	.14360424J	.51007363J	-.00000014
	.72903802M	.25971539M	.27043579M	.74028449M	
79.00	.51287313	-.22877107	.22108022	.49481793	1.00000020
	-.52729255J	-.15489198J	.15404285J	.52814172J	.00000004
	.73557887M	.27627473M	.26945438M	.72372540M	
80.00	.54713767	-.20574982	.21020958	.44840265	1.00000000
	-.49208659J	-.21362933J	.16376651J	.54194949J	.00000008
	.73587284M	.29659817M	.26647239M	.70340186M	
81.00	.57459013	-.16809632	.19628535	.39722074	.99999990
	-.44793437J	-.27416322J	.17214105J	.54995652J	-.00000002
	.72855955M	.32159266M	.26107562M	.67840731M	
82.00	.59248474	-.11312739	.17912850	.34151419	1.00000000
	-.39497398J	-.33368297J	.17835337J	.55030354J	-.00000004
	.71206924M	.35233807M	.25277845M	.64766189M	
83.00	.59762464	-.03828484	.15870366	.28195664	1.00000010
	-.33396956J	-.38822446J	.18138982J	.54080415J	-.00000005
	.68461002M	.39010761M	.24101684M	.60989234M	
84.00	.58642874	.05853179	.13520420	.21983531	1.00000000
	-.26656046J	-.43244224J	.18002890J	.51897384J	.00000004
	.64416856M	.43638544M	.22514568M	.56361459M	
85.00	.55508711	.17847539	.10916292	.15727444	.99999986
	-.19555424J	-.45942475J	.17285681J	.48212215J	-.00000003
	.58852626M	.49287377M	.20444074M	.50712622M	
86.00	.49985685	.32107410	.08158361	.09748541	.99999997
	-.12523664J	-.46062862J	.15832516J	.42754008J	-.00000002
	.51530678M	.56148669M	.17810879M	.43851330M	
87.00	.41753331	.48336312	.05408671	.04501675	.99999989
	-.06165563J	-.42603489J	.13486873J	.35282181J	.00000002
	.42206097M	.64431796M	.14530982M	.35568206M	
88.00	.30614062	.65886419	.02904610	.00594913	1.00000000
	-.01279207J	-.34467315J	.10110780J	.25635742J	.00000000
	.30640776M	.74357353M	.10519725M	.25642643M	
89.00	.16584060	.83654468	.00967443	-.01205969	1.00000000
	.01150834J	-.20567564J	.05615095J	.13801637J	.00000002
	.16623942M	.86145775M	.05697828M	.13854224M	
90.00	-.00000046	1.00000040	-.00000001	-.00000013	.99999990
	-.00000008J	.00000082J	-.00000024J	-.00000060J	-.00000010
	.00000047M	1.00000030M	.00000024M	.00000061M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	.800

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.02650081	.00000000	.97349922	1.00000000
1.00	.00006921	.02642082	.00000890	.97350088	.99999983
2.00	.00027599	.02618167	.00003562	.97350663	.99999993
3.00	.00061769	.02578596	.00008021	.97351588	.99999975
4.00	.00108997	.02523802	.00014271	.97352907	.99999978
5.00	.00168675	.02454382	.00022321	.97354590	.99999969
6.00	.00240033	.02371092	.00032181	.97356680	.99999987
7.00	.00322138	.02274856	.00043865	.97359123	.99999984
8.00	.00413907	.02166741	.00057388	.97361955	.99999992
9.00	.00514110	.02047959	.00072766	.97365148	.99999985
10.00	.00621382	.01919853	.00090019	.97368723	.99999978
11.00	.00734234	.01783897	.00109166	.97372681	.99999979
12.00	.00851061	.01641669	.00130229	.97377009	.99999968
13.00	.00970158	.01494848	.00153230	.97381754	.99999991
14.00	.01089733	.01345198	.00178193	.97386865	.99999991
15.00	.01207921	.01194561	.00205140	.97392369	.99999992
16.00	.01322800	.01044827	.00234092	.97398261	.99999981
17.00	.01432408	.00897931	.00265068	.97404567	.99999976
18.00	.01534758	.00755824	.00298083	.97411317	.99999983
19.00	.01627863	.00620469	.00333145	.97418511	.99999990
20.00	.01709748	.00493807	.00370255	.97426181	.99999992

21.00	.01778475	.00377750	.00409399	.97434359	.99999983
22.00	.01832161	.00274149	.00450547	.97443120	.99999978
23.00	.01869011	.00184781	.00493639	.97452553	.99999984
24.00	.01887323	.00111320	.00538582	.97462758	.99999984
25.00	.01885532	.00055314	.00585227	.97473910	.99999984
26.00	.01862224	.00018158	.00633346	.97486268	.99999996
27.00	.01816165	.00001063	.00682590	.97500169	.99999988
28.00	.01746328	.00005027	.00732424	.97516209	.99999988
29.00	.01651919	.00030785	.00782001	.97535305	1.00000010
30.00	.01532369	.00078766	.00829948	.97558919	1.00000000
31.00	.01387311	.00149014	.00873878	.97589797	1.00000000
32.00	.01216351	.00241062	.00909282	.97633286	.99999981
33.00	.01018181	.00353661	.00926318	.97701838	.99999999
34.00	.00785835	.00483887	.00897293	.97832959	.99999976
35.00	.00446104	.00619468	.00671910	.98262521	1.00000000
35.25	.00145623	.00634522	.00367294	.98852544	.99999985

IMAGINARY

35.50	.00331421	.00685744	.00307554	.98675272	.99999991
	.00470382J	.00047678J	.00551572J	-.01069633J	-.00000000
	.00575413M	.00687399M	.00631522M	.98681069M	
35.75	.00526775	.00748795	.00473937	.98250481	.99999989
	.00434842J	.00059153J	.00867978J	-.01361975J	.00000000
	.00683067M	.00751128M	.00988940M	.98259920M	
36.00	.00603598	.00809746	.00714364	.97872289	.99999998
	.00319954J	.00061518J	.01091568J	-.01473041J	.00000000
	.00683155M	.00812079M	.01304545M	.97883373M	
37.00	.00344513	.01026030	.01834714	.96794739	.99999998
	-.00031593J	.00035048J	.01161783J	-.01165238J	.00000000
	.00345959M	.01026629M	.02171616M	.96801752M	

IMAGINARY

38.00	.00028536	.01192496	.02415005	.96363937	.99999974
	-.00016501J	.00003599J	.00367998J	-.00355096J	.00000000
	.00032964M	.01192501M	.02442881M	.96364591M	

39.00	.00071978	.01304404	.02000708	.96622911	1.00000000
	-.00095140J	.00013625J	-.00533655J	.00615170J	.00000000
	.00119300M	.01304475M	.02070657M	.96624868M	
39.25	.00131553	.01321096	.01708401	.96838956	1.00000000
	-.00219864J	.00029451J	-.00671921J	.00862335J	.00000000
	.00256216M	.01321424M	.01835787M	.96842795M	
39.50	.00193444	.01330051	.01314202	.97162315	1.00000010
	-.00436921J	.00055118J	-.00723551J	.01105354J	.00000000
	.00477830M	.01331192M	.01500218M	.97168602M	
39.75	.00220526	.01323593	.00754234	.97701652	1.00000000
	-.00838345J	.00099801J	-.00596940J	.01335484J	.00000000
	.00866865M	.01327350M	.00961876M	.97710778M	

IMAGINARY

40.00	-.00500477	.01353115	.00524481	.98622885	1.00000000
	-.01329874J	.00242541J	.00393807J	.00693525J	.00000000
	.01420930M	.01374680M	.00655869M	.98625322M	
41.00	-.01311256	.01699178	.01364627	.98247446	.99999995
	-.00873390J	.00424265J	.00935600J	-.00486475J	-.00000000
	.01575501M	.01751344M	.01654556M	.98248649M	
42.00	-.01703724	.02009349	.01787574	.97906794	.99999993
	-.00785991J	.00571142J	.01127724J	-.00912875J	.00000000
	.01876288M	.02088944M	.02113571M	.97911049M	
43.00	-.02041911	.02325352	.02158947	.97557609	.99999998
	-.00814170J	.00724104J	.01250622J	-.01160556J	.00000000
	.02198243M	.02435485M	.02495017M	.97564511M	
44.00	-.02365724	.02650561	.02519778	.97195390	1.00000000
	-.00918394J	.00889460J	.01336430J	-.01307496J	-.00000000
	.02537735M	.02795821M	.02852249M	.97204183M	
45.00	-.02686343	.02984245	.02882187	.96819904	.99999993
	-.01085420J	.01069966J	.01395109J	-.01379654J	.00000000
	.02897340M	.03170259M	.03202083M	.96829733M	
46.00	-.03007393	.03324312	.03250772	.96432308	.99999999
	-.01310221J	.01267359J	.01430831J	-.01387969J	-.00000000
	.03280410M	.03557703M	.03551731M	.96442295M	
47.00	-.03329646	.03667973	.03627393	.96034289	1.00000000
	-.01591204J	.01482948J	.01445687J	-.01337430J	.00000000
	.03690322M	.03956408M	.03904867M	.96043601M	
48.00	-.03652519	.04011965	.04012723	.95627842	1.00000010
	-.01928458J	.01717809J	.01440895J	-.01230245J	.00000000
	.04130356M	.04364256M	.04263581M	.95635755M	

49.00	-.03974648	.04352637	.04406856	.95215156	1.00000000
	-.02322977J	.01972842J	.01417296J	-.01067161J	-.00000000
	.04603699M	.04778865M	.04629159M	.95221135M	
50.00	-.04294159	.04686017	.04809612	.94798546	1.00000010
	-.02776279J	.02248796J	.01375572J	-.00848090J	-.00000000
	.05113465M	.05197676M	.05002456M	.94802339M	
51.00	-.04608776	.05007819	.05220665	.94380289	.99999997
	-.03290164J	.02546246J	.01316374J	-.00572458J	-.00000001
	.05662685M	.05617973M	.05384068M	.94382025M	
52.00	-.04915888	.05313474	.05639648	.93962790	1.00000020
	-.03866585J	.02865572J	.01240385J	-.00239373J	-.00000000
	.06254313M	.06036929M	.05774443M	.93963094M	
53.00	-.05212579	.05598130	.06066197	.93548241	.99999989
	-.04507579J	.03206929J	.01148342J	.00152307J	-.00000000
	.06891244M	.06451624M	.06173932M	.93548364M	
54.00	-.05495629	.05856660	.06499986	.93138985	1.00000000
	-.05215152J	.03570187J	.01041087J	.00603878J	.00000001
	.07576262M	.06859060M	.06582832M	.93140942M	
55.00	-.05761528	.06083688	.06940767	.92737056	.99999983
	-.05991273J	.03954898J	.00919553J	.01116819J	-.00000002
	.08312074M	.07256203M	.07001416M	.92743780M	
56.00	-.06006456	.06273583	.07388371	.92344530	1.00000020
	-.06837770J	.04360216J	.00784813J	.01692738J	-.00000001
	.09101242M	.07639982M	.07429936M	.92360042M	
57.00	-.06226277	.06420471	.07842726	.91963071	.99999991
	-.07756362J	.04784843J	.00638032J	.02333485J	-.00000001
	.09946239M	.08007320M	.07868636M	.91992670M	
58.00	-.06416508	.06518248	.08303867	.91594383	.99999990
	-.08748517J	.05226926J	.00480537J	.03041054J	.00000000
	.10849338M	.08355137M	.08317760M	.91644852M	
59.00	-.06572320	.06560620	.08771943	.91239749	.99999993
	-.09815492J	.05683991J	.00313792J	.03817712J	.00000003
	.11812674M	.08680408M	.08777554M	.91319585M	
60.00	-.06688484	.06541099	.09247208	.90900151	.99999974
	-.10958213J	.06152811J	.00139412J	.04665989J	.00000000
	.12838156M	.08980148M	.09248258M	.91019826M	
61.00	-.06759362	.06453065	.09730009	.90576291	1.00000000
	-.12177210J	.06629287J	-.00040801J	.05588725J	.00000000
	.13927434M	.09251459M	.09730095M	.90748544M	
62.00	-.06778866	.06289821	.10220809	.90268233	.99999997
	-.13472641J	.07108340J	-.00224875J	.06589175J	-.00000000
	.15081945M	.09491593M	.10223282M	.90508403M	

63.00	-.06740425	.06044652	.10720129	.89975645	1.00000000
	-.14844048J	.07583696J	-.00410597J	.07670951J	.00000002
	.16302732M	.09697952M	.10727989M	.90302049M	
64.00	-.06636943	.05710950	.11228549	.89697456	1.00000010
	-.16290367J	.08047738J	-.00595526J	.08838159J	.00000003
	.17590482M	.09868183M	.11244330M	.90131829M	
65.00	-.06460771	.05282342	.11746672	.89431751	.99999995
	-.17809746J	.08491274J	-.00776937J	.10095409J	.00000000
	.18945411M	.10000244M	.11772337M	.89999751M	
66.00	-.06203668	.04752893	.12275095	.89175679	1.00000000
	-.19399400J	.08903310J	-.00951772J	.11447861J	-.00000001
	.20367184M	.10092518M	.12311938M	.89907481M	
67.00	-.05856758	.04117371	.12814317	.88925067	.99999998
	-.21055392J	.09270756J	-.01116606J	.12901240J	-.00000002
	.21854774M	.10143946M	.12862874M	.89856048M	
68.00	-.05410534	.03371593	.13364686	.88674256	1.00000000
	-.22772384J	.09578104J	-.01267572J	.14461854J	.00000002
	.23406310M	.10154197M	.13424662M	.89845806M	
69.00	-.04854828	.02512917	.13926314	.88415612	1.00000010
	-.24543347J	.09807107J	-.01400315J	.16136552J	-.00000003
	.25018897M	.10123936M	.13996538M	.89876074M	
70.00	-.04178842	.01540868	.14498890	.88139086	1.00000000
	-.26359149J	.09936366J	-.01509899J	.17932678J	-.00000004
	.26688339M	.10055131M	.14577297M	.89944868M	
71.00	-.03371235	.00458001	.15081538	.87831689	.99999993
	-.28208026J	.09940910J	-.01590732J	.19857846J	-.00000002
	.28408765M	.09951455M	.15165197M	.90048540M	
72.00	-.02420233	-.00728944	.15672603	.87476576	1.00000000
	-.30075069J	.09791833J	-.01636501J	.21919735J	-.00000002
	.30172293M	.09818929M	.15757811M	.90181073M	
73.00	-.01313854	-.02007570	.16269287	.87052130	.99999992
	-.31941398J	.09455852J	-.01640080J	.24125626J	.00000000
	.31968407M	.09666617M	.16351744M	.90333377M	
74.00	-.00040337	-.03357752	.16867279	.86530800	.99999990
	-.33783203J	.08895033J	-.01593490J	.26481658J	-.00000002
	.33783226M	.09507687M	.16942382M	.90492306M	
75.00	.01411256	-.04748978	.17460179	.85877539	.99999996
	-.35570535J	.08066643J	-.01487876J	.28991764J	-.00000004
	.35598519M	.09360744M	.17523459M	.90639251M	
76.00	.03050088	-.06136808	.18038803	.85047922	1.00000000
	-.37265882J	.06923420J	-.01313563J	.31656022J	-.00000003
	.37390493M	.09251711M	.18086565M	.90748293M	

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77.00	.04882163	-.07458218	.18590305	.83985759	1.00000000
	-.38822457J	.05414465J	-.01060264J	.34468252J	-.00000004
	.39128234M	.09216368M	.18620515M	.90783633M	
78.00	.06907980	-.08625418	.19096848	.82620580	.99999991
	-.40181795J	.03487023J	-.00717435J	.37412203J	-.00000004
	.40771272M	.09303610M	.19110319M	.90696378M	
79.00	.09119422	-.09517920	.19534172	.80864336	1.00000010
	-.41271421J	.01090235J	-.00275062J	.40456247J	-.00000001
	.42266937M	.09580157M	.19536108M	.90419846M	
80.00	.11494912	-.09972293	.19869486	.78607895	1.00000000
	-.42001823J	-.01818620J	.00275069J	.43545376J	.00000002
	.43546367M	.10136764M	.19871389M	.89863234M	
81.00	.13992138	-.09769199	.20059051	.75718016	1.00000000
	-.42263363J	-.05263185J	.00937199J	.46589344J	-.00000005
	.44519341M	.11096772M	.20080932M	.88903233M	
82.00	.16537822	-.08617740	.20045153	.72034766	1.00000000
	-.41923504J	-.09230265J	.01708034J	.49445735J	.00000000
	.45067501M	.12627875M	.20117791M	.87372124M	
83.00	.19012356	-.06137285	.19752739	.67372199	1.00000000
	-.40825144J	-.13641096J	.02571085J	.51895144J	-.00000011
	.45035119M	.14958133M	.19919366M	.85041867M	
84.00	.21228105	-.01838830	.19085979	.61524734	.99999988
	-.38787836J	-.18305857J	.03487762J	.53605925J	-.00000006
	.44216836M	.18397980M	.19402037M	.81602010M	
85.00	.22898603	.04889383	.17925918	.54286094	.99999998
	-.35615625J	-.22852846J	.04383615J	.54084863J	.00000007
	.42341689M	.23370037M	.18454122M	.76629970M	
86.00	.23596532	.14781270	.16131148	.45491047	.99999997
	-.31117137J	-.26620975J	.05127668J	.52610448J	.00000004
	.39052176M	.30449339M	.16926514M	.69550662M	
87.00	.22699033	.28655410	.13545949	.35099607	.99999999
	-.25149128J	-.28501411J	.05502267J	.48148269J	-.00000003
	.33878085M	.40416121M	.14620795M	.59583875M	
88.00	.19323668	.47298933	.10023880	.23353519	1.00000000
	-.17700906J	-.26716551J	.05161596J	.39255856J	-.00000005
	.26205461M	.54322768M	.11274761M	.45677226M	
89.00	.12269096	.71198671	.05480859	.11051378	1.00000000
	-.09046526J	-.18538981J	.03579915J	.24005596J	.00000004
	.15243699M	.73572716M	.06546419M	.26427288M	
90.00	-.00000075	1.00000100	-.00000026	-.00000020	.99999990
	.00000040J	.00000109J	-.00000019J	-.00000120J	.00000009
	.00000086M	1.00000090M	.00000033M	.00000122M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	.900

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.05152621	.00000000	.94847369	.99999990
1.00	.00014197	.05134447	.00006238	.94845091	.99999974
2.00	.00056561	.05080152	.00024962	.94838320	.99999996
3.00	.00126412	.04990444	.00056197	.94826924	.99999977
4.00	.00222621	.04866492	.00099986	.94810896	.99999996
5.00	.00343627	.04709920	.00156390	.94790048	.99999986
6.00	.00487451	.04522773	.00225489	.94764274	.99999988
7.00	.00651720	.04307531	.00307378	.94733349	.99999978
8.00	.00833686	.04067052	.00402173	.94697080	.99999992
9.00	.01030268	.03804560	.00510009	.94655143	.99999981
10.00	.01238074	.03523609	.00631043	.94607255	.99999981
11.00	.01453452	.03228051	.00765449	.94553033	.99999986
12.00	.01672525	.02921985	.00913426	.94492045	.99999982
13.00	.01891241	.02609723	.01075198	.94423821	.99999984
14.00	.02105428	.02295736	.01251010	.94347805	.99999980
15.00	.02310843	.01984614	.01441137	.94263376	.99999971
16.00	.02503236	.01681001	.01645882	.94169867	.99999988
17.00	.02678412	.01389547	.01865583	.94066437	.99999979
18.00	.02832290	.01114846	.02100607	.93952237	.99999981
19.00	.02960986	.00861380	.02351368	.93826246	.99999980
20.00	.03060870	.00633449	.02618315	.93687352	.99999987

21.00	.03128654	.00435118	.02901955	.93534273	1.00000000
22.00	.03161471	.00270142	.03202844	.93365531	.99999988
23.00	.03156947	.00141904	.03521601	.93179540	.99999992
24.00	.03113303	.00053346	.03858914	.92974425	.99999989
25.00	.03029438	.00006899	.04215547	.92748100	.99999985
26.00	.02905030	.00004416	.04592340	.92498200	.99999986
27.00	.02740634	.00047092	.04990205	.92222063	.99999995
28.00	.02537782	.00135397	.05410085	.91916718	.99999984
29.00	.02299112	.00268994	.05852862	.91579028	.99999997
30.00	.02028449	.00446644	.06319121	.91205775	.99999990
31.00	.01730882	.00666110	.06808477	.90794527	.99999997
32.00	.01412696	.00923989	.07317744	.90345570	1.00000000
33.00	.01080723	.01215424	.07834870	.89868968	.99999985
34.00	.00738561	.01533152	.08312430	.89415841	.99999985
35.00	.00340887	.01859290	.08415027	.89384776	.99999981
35.25	.00097251	.01919909	.07770959	.90211885	1.00000000

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35.50	.00160015	.02021206	.08133254	.89685516	.99999992
	.00330803J	.00052247J	.01511861J	-.01894911J	.00000000
	.00367471M	.02021881M	.08272578M	.89705531M	
35.75	.00260778	.02134205	.08901438	.88703575	.99999997
	.00347008J	.00063420J	.02020905J	-.02431334J	.00000000
	.00434074M	.02135147M	.09127960M	.88736889M	
36.00	.00306855	.02243630	.09666262	.87783238	.99999986
	.00303948J	.00064701J	.02282766J	-.02651415J	.00000000
	.00431908M	.02244563M	.09932152M	.87823270M	
37.00	.00199968	.02643215	.12498434	.84658384	1.00000000
	.00079326J	.00034976J	.02076886J	-.02191188J	.00000000
	.00215128M	.02643446M	.12669818M	.84686736M	
38.00	.00023512	.02982545	.14708234	.82285708	.99999999
	.00002394J	.00004081J	.00765196J	-.00771672J	.00000000
	.00023633M	.02982547M	.14728125M	.82289325M	

39.00	.00040238	.03268030	.16190097	.80501630	.99999995
	-.00004471J	.00007318J	-.01042339J	.01039491J	-.00000000
	.00040485M	.03268038M	.16223615M	.80508340M	
40.00	.00318311	.03507328	.17001234	.79173125	.99999999
	-.00091961J	.00062053J	-.02986528J	.03016436J	.00000000
	.00331329M	.03507877M	.17261555M	.79230565M	
41.00	.00836444	.03706126	.17260943	.78196502	1.00000010
	-.00375178J	.00176532J	-.04852972J	.05051618J	.00000000
	.00916732M	.03710328M	.17930183M	.78359502M	
42.00	.01542368	.03867101	.17097810	.77492712	.99999991
	-.00922133J	.00353748J	-.06523866J	.07092250J	-.00000001
	.01797005M	.03883247M	.18300162M	.77816581M	
43.00	.02381362	.03989919	.16626307	.77002404	.99999993
	-.01764145J	.00593605J	-.07943190J	.09113730J	-.00000000
	.02963628M	.04033835M	.18426295M	.77539862M	
44.00	.03308009	.04071595	.15939069	.76681328	1.00000000
	-.02908783J	.00894126J	-.09091987J	.11106644J	.00000000
	.04404991M	.04168614M	.18349881M	.77481504M	
45.00	.04289514	.04106924	.15106625	.76496942	1.00000000
	-.04350210J	.01252080J	-.09971792J	.13069921J	-.00000001
	.06109358M	.04293545M	.18101015M	.77605443M	
46.00	.05305254	.04088851	.14179987	.76425903	.99999995
	-.06076373J	.01663244J	-.10594002J	.15007134J	.00000003
	.08066476M	.04414191M	.17700421M	.77885381M	
47.00	.06344907	.04008738	.13193995	.76452357	.99999998
	-.08073662J	.02122460J	-.10973220J	.16924423J	.00000001
	.10268489M	.04535948M	.17160800M	.78303249M	
48.00	.07406334	.03856437	.12170226	.76566998	.99999996
	-.10330013J	.02623574J	-.11123019J	.18829457J	-.00000001
	.12710741M	.04664252M	.16487448M	.78848294M	
49.00	.08493582	.03620236	.11119186	.76766999	1.00000000
	-.12837223J	.03159283J	-.11052974J	.20730914J	.00000000
	.15392700M	.04804912M	.15678154M	.79516934M	
50.00	.09615222	.03286472	.10041382	.77056923	1.00000000
	-.15593437J	.03720950J	-.10765953J	.22638442J	.00000002
	.18319600M	.04964511M	.14721925M	.80313562M	
51.00	.10782899	.02838610	.08926822	.77451664	.99999995
	-.18606985J	.04298343J	-.10254384J	.24563026J	.00000000
	.21505599M	.05151064M	.13595607M	.81253323M	
52.00	.12009883	.02255124	.07751786	.77983203	.99999996
	-.21904119J	.04879330J	-.09493280J	.26518068J	-.00000001
	.24980546M	.05375262M	.12256123M	.82368609M	

53.00	.13308944	.01504039	.06468863	.78718147	.99999993
	-.25548129J	.05449467J	-.08423385J	.28522046J	-.00000001
	.28806854M	.05653213M	.10620716M	.83726064M	
54.00	.14686503	.00525735	.04974226	.79813533	.99999997
	-.29699718J	.05991546J	-.06898317J	.30606488J	-.00000001
	.33132561M	.06014567M	.08504687M	.85480741M	
55.00	.16108543	-.00857817	.02934892	.81814374	.99999992
	-.34938891J	.06486763J	-.04403284J	.32855406J	-.00000006
	.38473512M	.06543237M	.05291739M	.88165012M	
55.25	.16440382	-.01352778	.02177460	.82734932	.99999996
	-.36718824J	.06602858J	-.03364362J	.33480326J	-.00000002
	.40231307M	.06740011M	.04007526M	.89252457M	
55.50	.16683039	-.02084641	.00985685	.84415914	.99999997
	-.39325747J	.06723803J	-.01599845J	.34201790J	.00000001
	.42718123M	.07039549M	.01879117M	.91081331M	

IMAGINARY

55.75	.13903970	-.02686462	.02677877	.86104616	1.00000000
	-.41177101J	.07677732J	.01478640J	.32020731J	.00000002
	.43461176M	.08134166M	.03058987M	.91865837M	
56.00	.12843445	-.02819145	.04070183	.85905519	1.00000000
	-.41379412J	.08203693J	.02182550J	.30993168J	-.00000001
	.43326778M	.08674570M	.04618432M	.91325432M.	
57.00	.11470532	-.03517857	.07200743	.84846575	.99999993
	-.42719696J	.09536605J	.03663097J	.29519987J	-.00000007
	.44232855M	.10164750M	.08078922M	.89835243M	
58.00	.11527769	-.04401349	.09215708	.83657872	1.00000000
	-.44370013J	.10469590J	.04593077J	.29307345J	-.00000001
	.45843074M	.11357120M	.10296875M	.88642878M	
59.00	.12252630	-.05444114	.10794775	.82396706	.99999997
	-.46159343J	.11184676J	.05349260J	.29625400J	-.00000007
	.47757845M	.12439266M	.12047478M	.87560730M	
60.00	.13445892	-.06635953	.12119353	.81070700	.99999992
	-.48015749J	.11712574J	.06031086J	.30272082J	-.00000007
	.49862853M	.13461807M	.13537086M	.86538184M	
61.00	.15023891	-.07968265	.13266588	.79677781	.99999995
	-.49889095J	.12051653J	.06682187J	.31155255J	.00000000
	.52102198M	.14447684M	.14854426M	.85552315M	
62.00	.16943470	-.09430885	.14275397	.78212009	.99999991
	-.51736402J	.12187616J	.07326332J	.32222440J	-.00000014
	.54440209M	.15410372M	.16045625M	.84589621M	

63.00	.19178441	-.11010526	.15166746	.76665334	.99999995
	-.53516704J	.12099603J	.07978119J	.33438975J	-.00000007
	.56849364M	.16359464M	.17137110M	.83640530M	
64.00	.21709853	-.12689710	.15951753	.75028106	1.00000000
	-.55188982J	.11762806J	.08647089J	.34779084J	-.00000003
	.59305492M	.17302957M	.18144712M	.82697045M	
65.00	.24521081	-.14445855	.16635472	.73289299	.99999997
	-.56711038J	.11149993J	.09339520J	.36221524J	-.00000001
	.61785315M	.18248426M	.19077881M	.81751575M	
66.00	.27594700	-.16250371	.17218942	.71436729	1.00000000
	-.58038969J	.10232615J	.10059290J	.37747063J	-.00000001
	.64264992M	.19203670M	.19941947M	.80796330M	
67.00	.30910314	-.18067724	.17700229	.69457184	1.00000000
	-.59126975J	.08981858J	.10808221J	.39336891J	-.00000005
	.66719162M	.20177126M	.20739232M	.79822875M	
68.00	.34442859	-.19854572	.18075189	.67336522	.99999998
	-.59927496J	.07369836J	.11586196J	.40971460J	-.00000004
	.69120295M	.21178255M	.21469802M	.78821746M	
69.00	.38161056	-.21558853	.18337890	.65059909	1.00000000
	-.60391547J	.05370901J	.12391085J	.42629548J	-.00000013
	.71438120M	.22217801M	.22131814M	.77782197M	
70.00	.42025858	-.23118953	.18481001	.62612100	1.00000000
	-.60469325J	.02963329J	.13218598J	.44287397J	-.00000001
	.73639065M	.23308095M	.22721767M	.76691907M	
71.00	.45988937	-.24462915	.18496108	.59977881	1.00000010
	-.60111165J	.00131251J	.14062020J	.45917895J	.00000001
	.75685761M	.24463266M	.23234595M	.75536741M	
72.00	.49991374	-.25507936	.18374059	.57142509	1.00000000
	-.59268832J	-.03132867J	.14911882J	.47489818J	.00000001
	.77536648M	.25699604M	.23663690M	.74300397M	
73.00	.53962152	-.26160063	.18105369	.54092540	.99999998
	-.57897246J	-.06825397J	.15755610J	.48967023J	-.00000010
	.79145466M	.27035808M	.24000909M	.72964184M	
74.00	.57816820	-.26314334	.17680725	.50816785	.99999996
	-.55956706J	-.10928102J	.16577112J	.50307692J	-.00000004
	.80460782M	.28493290M	.24236515M	.71506709M	
75.00	.61456452	-.25855563	.17091609	.47307490	.99999988
	-.53415721J	-.15404198J	.17356346J	.51463573J	.00000000
	.81425639M	.30096502M	.24359101M	.69903489M	
76.00	.64766871	-.24659989	.16331119	.43562009	1.00000010
	-.50254514J	-.20193832J	.18068945J	.52379402J	.00000001
	.81977215M	.31873278M	.24355537M	.68126723M	

77.00	.67618531	-.22598047	.15394960	.39584558	1.00000000
	-.46469119J	-.25209185J	.18685868J	.52992429J	-.00000007
	.82046600M	.33855201M	.24210874M	.66144801M	
78.00	.69866872	-.19538499	.14282715	.35388909	.99999997
	-.42076333J	-.30329114J	.19173201J	.53232241J	-.00000005
	.81558553M	.36077806M	.23908316M	.63922190M	
79.00	.71354161	-.15354592	.12999362	.31001080	1.00000010
	-.37119441J	-.35393828J	.19492166J	.53021102J	-.00000001
	.80431767M	.38580909M	.23429211M	.61419086M	
80.00	.71912633	-.09932123	.11556991	.26462500	1.00000000
	-.31674080J	-.40200122J	.19599422J	.52274778J	-.00000002
	.78579094M	.41408897M	.22753052M	.58591094M	
81.00	.71369370	-.03180333	.09976882	.21834089	1.00000000
	-.25855145J	-.44497095J	.19447845J	.50904399J	.00000004
	.75908336M	.44610604M	.21857650M	.55389396M	
82.00	.69553803	.04954686	.08291638	.17199874	1.00000000
	-.19822820J	-.47984307J	.18987860J	.48819257J	-.00000010
	.72323409M	.48239429M	.20719317M	.51760559M	
83.00	.66307662	.14473706	.06547426	.12671215	1.00000000
	-.13788368J	-.50312470J	.18169580J	.45931254J	-.00000004
	.67726102M	.52352962M	.19313270M	.47647032M	
84.00	.61498040	.25305671	.04805987	.08390297	.99999995
	-.08017986J	-.51088571J	.16945772J	.42160794J	.00000009
	.62018521M	.57012446M	.17614105M	.42987551M	
85.00	.55033372	.37287363	.03146280	.04532990	1.00000000
	-.02834034J	-.49886683J	.15275944J	.37444772J	-.00000001
	.55106294M	.62281847M	.15596587M	.37718152M	
86.00	.46882110	.50142906	.01665161	.01309820	.99999997
	.01388218J	-.46266084J	.13131421J	.31746444J	-.00000001
	.46902657M	.68226545M	.13236577M	.31773452M	
87.00	.37093045	.63465487	.00476803	-.01035336	1.00000000
	.04229238J	-.39797774J	.10501395J	.25067140J	-.00000001
	.37333368M	.74911486M	.10512213M	.25088511M	
88.00	.25815670	.76704395	-.00289821	-.02230243	1.00000000
	.05241324J	-.30100200J	.07399696J	.17459184J	.00000004
	.26342367M	.82398945M	.07405369M	.17601053M	
89.00	.13318217	.89161293	-.00495814	-.01983693	1.00000010
	.03972687J	-.16883450J	.03871595J	.09039168J	.00000000
	.13898098M	.90745727M	.03903214M	.09254274M	
90.00	-.00000070	1.00000020	.00000003	.00000026	.99999979
	-.00000027J	.00000081J	-.00000015J	-.00000030J	.00000009
	.00000075M	1.00000010M	.00000015M	.00000040M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	.900

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.02650081	.00000000	.97349920	1.00000000
1.00	.00007210	.02640807	.00002913	.97349059	.99999989
2.00	.00028726	.02613095	.00011658	.97346501	.99999982
3.00	.00064205	.02567296	.00026252	.97342212	.99999966
4.00	.00113075	.02504000	.00046724	.97336179	.99999978
5.00	.00174547	.02424011	.00073113	.97328316	.99999987
6.00	.00247618	.02328359	.00105471	.97318553	1.00000000
7.00	.00331084	.02218282	.00143862	.97306749	.99999978
8.00	.00423550	.02095211	.00188363	.97292864	.99999989
9.00	.00523444	.01960771	.00239065	.97276717	.99999998
10.00	.00629036	.01816752	.00296070	.97258128	.99999987
11.00	.00738453	.01665096	.00359497	.97236939	.99999986
12.00	.00849703	.01507884	.00429482	.97212919	.99999989
13.00	.00960696	.01347303	.00506174	.97185810	.99999983
14.00	.01069267	.01185642	.00589744	.97155328	.99999983
15.00	.01173210	.01025251	.00680383	.97121138	.99999982
16.00	.01270294	.00868524	.00778300	.97082865	.99999984
17.00	.01358308	.00717874	.00883735	.97040069	.99999987
18.00	.01435087	.00575700	.00996953	.96992241	.99999982
19.00	.01498546	.00444361	.01118250	.96938837	.99999995
20.00	.01546725	.00326145	.01247965	.96879160	.99999996

21.00	.01577826	.00223235	.01386475	.96812457	.99999993
22.00	.01590256	.00137678	.01534214	.96737836	.99999985
23.00	.01582684	.00071351	.01691678	.96654265	.99999979
24.00	.01554084	.00025922	.01859442	.96560529	.99999979
25.00	.01503802	.00002816	.02038179	.96455188	.99999986
26.00	.01431622	.00003170	.02228684	.96336508	.99999985
27.00	.01337842	.00027797	.02431913	.96202438	.99999992
28.00	.01223368	.00077135	.02649030	.96050458	.99999991
29.00	.01089824	.00151197	.02881464	.95877511	.99999997
30.00	.00939690	.00249516	.03130992	.95679799	.99999998
31.00	.00776469	.00371070	.03399793	.95452667	1.00000000
32.00	.00604899	.00514191	.03690361	.95190546	.99999998
33.00	.00431161	.00676426	.04004539	.94887874	1.00000000
34.00	.00262622	.00854260	.04336934	.94546167	.99999984
35.00	.00098607	.01041541	.04589707	.94270155	1.00000010
35.25	.00026265	.01085267	.04404146	.94484319	.99999998

IMAGINARY

35.50	.00041235	.01137867	.04675239	.94145663	1.00000000
	.00078955J	.00009501J	.00602487J	-.00690944J	.00000000
	.00089075M	.01137907M	.04713900M	.94148198M	
35.75	.00057727	.01191837	.05106727	.93643700	.99999992
	.00070113J	.00009915J	.00744968J	-.00824996J	.00000000
	.00090820M	.01191878M	.05160779M	.93647333M	
36.00	.00055675	.01244059	.05522640	.93177628	1.00000000
	.00049404J	.00008302J	.00760075J	-.00817782J	.00000000
	.00074434M	.01244087M	.05574699M	.93181216M	
37.00	.00001878	.01435551	.06920200	.91642372	1.00000000
	.00000563J	.00000235J	.00155449J	-.00156247J	-.00000000
	.00001961M	.01435551M	.06921946M	.91642504M	
38.00	.00067743	.01600991	.07765251	.90566014	1.00000000
	-.00000737J	.00008572J	-.00986655J	.00978821J	.00000000
	.00067747M	.01601014M	.07827682M	.90571302M	

39.00	.00345888	.01743480	.08040848	.89869780	.99999996
	-.00087482J	.00047113J	-.02274302J	.02314671J	.00000000
	.00356779M	.01744116M	.08356296M	.89899583M	
40.00	.00818137	.01865195	.07824088	.89492580	1.00000000
	-.00388548J	.00123763J	-.03472640J	.03737426J	.00000000
	.00905714M	.01869296M	.08560116M	.89570587M	
41.00	.01421954	.01966265	.07219172	.89392614	1.00000000
	-.00994903J	.00243816J	-.04440359J	.05191446J	.00000000
	.01735450M	.01981324M	.08475449M	.89543232M	
42.00	.02082791	.02044145	.06324067	.89548993	.99999997
	-.01969102J	.00411851J	-.05092005J	.06649256J	-.00000000
	.02866248M	.02085222M	.08119258M	.89795516M	
43.00	.02724440	.02092796	.05215638	.89967127	1.00000000
	-.03366711J	.00633520J	-.05365211J	.08098402J	.00000000
	.04330972M	.02186582M	.07482538M	.90330880M	
44.00	.03261593	.02100459	.03941410	.90696546	1.00000000
	-.05270379J	.00918575J	-.05182696J	.09534499J	-.00000000
	.06197975M	.02292533M	.06511149M	.91196327M	
45.00	.03555521	.02041480	.02502407	.91900603	1.00000010
	-.07879313J	.01290387J	-.04367393J	.10956319J	.00000000
	.08644380M	.02415107M	.05033504M	.92551400M	
46.00	.03028128	.01808921	.00708727	.94454227	1.00000000
	-.12187895J	.01864074J	-.02024094J	.12347914J	-.00000001
	.12558437M	.02597493M	.02144587M	.95257923M	

IMAGINARY

46.25	.00749134	.01744797	.01088197	.96417886	1.00000010
	-.14053542J	.02313790J	.00232882J	.11506870J	.00000000
	.14073494M	.02897920M	.01112837M	.97102094M	
46.50	-.00568005	.01959395	.02367134	.96241477	1.00000000
	-.13352941J	.02535421J	.00474204J	.10343316J	.00000000
	.13365016M	.03204308M	.02414165M	.96795692M	
46.75	-.01251797	.02095979	.03067476	.96088342	1.00000000
	-.13063080J	.02697124J	.00591464J	.09774489J	-.00000002
	.13122920M	.03415788M	.03123978M	.96584212M	
47.00	-.01739876	.02206975	.03589932	.95942959	.99999991
	-.12910303J	.02841594J	.00672003J	.09396705J	-.00000000
	.13027013M	.03597971M	.03652287M	.96402019M	
48.00	-.02956917	.02542892	.05023529	.95390496	1.00000000
	-.12873855J	.03365832J	.00861462J	.08646559J	-.00000000
	.13209068M	.04218427M	.05096858M	.95781572M	

49.00	-.03696208	.02789748	.06052984	.94853475	.99999999
	-.13276392J	.03871617J	.00967514J	.08437259J	-.00000001
	.13781310M	.04772014M	.06129820M	.95227984M	
50.00	-.04220467	.02976555	.06924906	.94318992	.99999985
	-.13922444J	.04383553J	.01037384J	.08501504J	-.00000002
	.14548085M	.05298624M	.07002177M	.94701361M	
51.00	-.04609088	.03108841	.07717342	.93782904	.99999999
	-.14744725J	.04907957J	.01086112J	.08750654J	-.00000000
	.15448320M	.05809728M	.07793395M	.94190270M	
52.00	-.04893756	.03185691	.08464656	.93243403	.99999994
	-.15711283J	.05445956J	.01121095J	.09144230J	-.00000001
	.16455797M	.06309284M	.08538575M	.93690709M	
53.00	-.05087777	.03203573	.09184596	.92699605	.99999997
	-.16804069J	.05996223J	.01147095J	.09660746J	-.00000004
	.17557397M	.06798351M	.09255952M	.93201645M	
54.00	-.05195742	.03157699	.09887224	.92150815	.99999995
	-.18011490J	.06555844J	.01167812J	.10287830J	-.00000004
	.18745919M	.07276686M	.09955952M	.92723309M	
55.00	-.05217486	.03042629	.10578582	.91596267	.99999993
	-.19325175J	.07120608J	.01186494J	.11018072J	-.00000001
	.20017106M	.07743427M	.10644912M	.92256566M	
56.00	-.05149965	.02852627	.11262403	.91034941	1.00000000
	-.20738288J	.07685082J	.01206231J	.11846975J	.00000000
	.21368170M	.08197437M	.11326813M	.91802566M	
57.00	-.04988243	.02581891	.11941001	.90465348	.99999998
	-.22244624J	.08242616J	.01230088J	.12771916J	-.00000004
	.22797058M	.08637527M	.12004191M	.91362470M	
58.00	-.04726062	.02224772	.12615755	.89885530	.99999995
	-.23837939J	.08785256J	.01261195J	.13791486J	-.00000002
	.24301913M	.09062579M	.12678638M	.90937415M	
59.00	-.04356176	.01775948	.13287355	.89292868	.99999995
	-.25511593J	.09303673J	.01302778J	.14905141J	-.00000001
	.25880835M	.09471659M	.13351068M	.90528335M	
60.00	-.03870598	.01230643	.13955967	.88683975	.99999988
	-.27258196J	.09787057J	.01358207J	.16112929J	-.00000003
	.27531632M	.09864126M	.14021901M	.90135863M	
61.00	-.03260810	.00584865	.14621302	.88054643	1.00000000
	-.29069277J	.10222977J	.01430998J	.17415303J	.00000001
	.29251593M	.10239693M	.14691161M	.89760308M	
62.00	-.02517866	-.00164333	.15282615	.87399578	.99999994
	-.30935112J	.10597293J	.01524815J	.18813001J	-.00000003
	.31037409M	.10598566M	.15358495M	.89401427M	

63.00	-.01632618	-.01018532	.15938718	.86712418	.99999986
	-.32844383J	.10894001J	.01643503J	.20306875J	-.00000004
	.32884934M	.10941510M	.16023227M	.89058477M	
64.00	-.00595868	-.01977545	.16587921	.85985492	.99999999
	-.34783918J	.11095131J	.01791057J	.21897729J	-.00000001
	.34789021M	.11269987M	.16684333M	.88730013M	
65.00	.00601445	-.03038981	.17227946	.85209591	1.00000000
	-.36738456J	.11180645J	.01971602J	.23586211J	.00000002
	.36743377M	.11586294M	.17340395M	.88413707M	
66.00	.01967992	-.04197691	.17855872	.84373815	.99999989
	-.38690354J	.11128381J	.02189390J	.25372579J	-.00000004
	.38740371M	.11893757M	.17989596M	.88106233M	
67.00	.03511706	-.05445079	.18467982	.83465392	1.00000000
	-.40619172J	.10914006J	.02448746J	.27256415J	-.00000005
	.40770689M	.12196901M	.18629619M	.87803096M	
68.00	.05239411	-.06768338	.19059607	.82469318	.99999999
	-.42501385J	.10511052J	.02754000J	.29236330J	-.00000003
	.42823114M	.12501704M	.19257547M	.87498293M	
69.00	.07156315	-.08149487	.19625017	.81368157	1.00000000
	-.44310016J	.09891084J	.03109384J	.31309548J	.00000000
	.44884187M	.12815915M	.19869815M	.87184085M	
70.00	.09265426	-.09564270	.20157165	.80141685	1.00000000
	-.46014269J	.09023985J	.03518914J	.33471372J	.00000002
	.46937842M	.13149432M	.20462014M	.86850575M	
71.00	.11566618	-.10980788	.20647497	.78766680	1.00000000
	-.47579016J	.07878393J	.03986195J	.35714430J	.00000002
	.48964777M	.13514687M	.21028763M	.86485318M	
72.00	.14055771	-.12357997	.21085688	.77216553	1.00000010
	-.48964572J	.06422532J	.04514159J	.38027888J	.00000007
	.50942065M	.13927275M	.21563484M	.86072739M	
73.00	.16723426	-.13643901	.21459388	.75461082	.99999995
	-.50126294J	.04625317J	.05104712J	.40396268J	.00000003
	.52842391M	.14406581M	.22058182M	.85593419M	
74.00	.19553171	-.14773513	.21753954	.73466375	.99999987
	-.51014331J	.02458030J	.05758294J	.42798005J	-.00000002
	.54633217M	.14976601M	.22503165M	.85023393M	
75.00	.22519636	-.15666574	.21952148	.71194783	.99999993
	-.51573568J	-.00103326J	.06473219J	.45203673J	-.00000002
	.56275810M	.15666914M	.22886663M	.84333084M	
76.00	.25586157	-.16225175	.22033904	.68605123	1.00000000
	-.51743900J	-.03074741J	.07244907J	.47573739J	.00000005
	.57724194M	.16513943M	.23194430M	.83486067M	

77.00	.28701757	-.16331255	.21976185	.65653325	1.00000010
	-.51460878J	-.06459716J	.08064802J	.49855790J	-.00000002
	.58923788M	.17562397M	.23409266M	.82437606M	
78.00	.31797433	-.15844227	.21752888	.62293890	.99999984
	-.50656954J	-.10243218J	.08919057J	.51981118J	.00000003
	.59809729M	.18866982M	.23510374M	.81133009M	
79.00	.34782102	-.14599301	.21335204	.58481997	1.00000000
	-.49263926J	-.14383584J	.09786840J	.53860674J	.00000004
	.60305298M	.20494562M	.23472817M	.79505447M	
80.00	.37537763	-.12406704	.20692070	.54176881	1.00000010
	-.47216377J	-.18802241J	.10638262J	.55380362J	.00000006
	.60319731M	.22526663M	.23266593M	.77473343M	
81.00	.39913984	-.09053063	.19791434	.49347640	.99999995
	-.44457457J	-.23370064J	.11431838J	.56395691J	.00000008
	.59746059M	.25062279M	.22855804M	.74937731M	
82.00	.41722621	-.04306094	.18602389	.43981084	1.00000000
	-.40946903J	-.27890818J	.12111628J	.56726102J	.00000009
	.58458754M	.28221271M	.22197756M	.71778731M	
83.00	.42732610	.02075546	.17098429	.38093419	1.00000000
	-.36672698J	-.32080933J	.12603968J	.56149668J	.00000005
	.56311302M	.32148003M	.21241852M	.67851999M	
84.00	.42666652	.10324453	.15262568	.31746325	.99999998
	-.31666896J	-.35546295J	.12814280J	.54398919J	.00000008
	.53134127M	.37015313M	.19928666M	.62984693M	
85.00	.41200773	.20635593	.13094692	.25068938	.99999996
	-.26026727J	-.37757245J	.12624227J	.51159738J	-.00000007
	.48732886M	.43028330M	.18189064M	.56971663M	
86.00	.37970284	.33121929	.10621742	.18286040	.99999995
	-.19941353J	-.38025155J	.11890353J	.46076154J	-.00000001
	.42888226M	.50427914M	.15943710M	.49572080M	
87.00	.32585133	.47750738	.07911185	.11752938	.99999994
	-.13723973J	-.35486085J	.10445378J	.38764685J	.00000005
	.35357294M	.59492816M	.13103158M	.40507188M	
88.00	.24659952	.64256779	.05087687	.05995585	1.00000000
	-.07847393J	-.29101069J	.08104393J	.28844074J	.00000005
	.25878462M	.70539391M	.09569000M	.29460611M	
89.00	.13864607	.82032275	.02352078	.01751039	.99999999
	-.02978111J	-.17687448J	.04678628J	.15986930J	-.00000001
	.14180848M	.83917458M	.05236586M	.16082539M	
90.00	-.00000048	1.00000060	-.00000007	-.00000014	1.00000010
	.00000005J	.00000076J	-.00000020J	-.00000068J	-.00000006
	.00000049M	1.00000050M	.00000021M	.00000070M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	.900

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.01101920	.00000000	.98898084	1.00000000
1.00	.00002923	.01098286	.00000791	.98897973	.99999974
2.00	.00011651	.01087421	.00003168	.98897742	.99999982
3.00	.00026054	.01069454	.00007135	.98897332	.99999976
4.00	.00045921	.01044599	.00012703	.98896757	.99999981
5.00	.00070956	.01013151	.00019882	.98895990	.99999980
6.00	.00100782	.00975482	.00028691	.98895035	.99999992
7.00	.00134948	.00932048	.00039150	.98893830	.99999977
8.00	.00172926	.00883371	.00051284	.98892395	.99999977
9.00	.00214122	.00830048	.00065121	.98890710	1.00000000
10.00	.00257876	.00772741	.00080694	.98888667	.99999979
11.00	.00303470	.00712168	.00098042	.98886301	.99999982
12.00	.00350135	.00649105	.00117207	.98883518	.99999966
13.00	.00397056	.00584371	.00138237	.98880322	.99999987
14.00	.00443382	.00518825	.00161185	.98876598	.99999991
15.00	.00488234	.00453362	.00186112	.98872284	.99999993
16.00	.00530710	.00388900	.00213084	.98867286	.99999980
17.00	.00569901	.00326372	.00242173	.98861519	.99999966
18.00	.00604899	.00266716	.00273462	.98854913	.99999991
19.00	.00634807	.00210873	.00307041	.98847270	.99999992
20.00	.00658751	.00159766	.00343011	.98838456	.99999985
21.00	.00675899	.00114296	.00381485	.98828318	.99999999

22.00	.00685469	.00075332	.00422591	.98816596	.99999989
23.00	.00686753	.00043696	.00466472	.98803073	.99999995
24.00	.00679128	.00020150	.00513291	.98787410	.99999980
25.00	.00662087	.00005387	.00563240	.98769267	.99999982
26.00	.00635259	.00000012	.00616541	.98748172	.99999986
27.00	.00598448	.00004530	.00673462	.98723554	.99999995
28.00	.00551671	.00019325	.00734332	.98694649	.99999979
29.00	.00495224	.00044638	.00799565	.98660580	1.00000000
30.00	.00429756	.00080543	.00869706	.98619995	1.00000000
31.00	.00356401	.00126911	.00945491	.98571187	.99999991
32.00	.00276968	.00183358	.01027950	.98511715	.99999992
33.00	.00194273	.00249163	.01118471	.98438087	.99999996
34.00	.00112640	.00323124	.01217955	.98346258	.99999979
35.00	.00036705	.00403051	.01304835	.98255410	1.00000000
35.25	.00009399	.00422842	.01247829	.98319915	.99999986

IMAGINARY

35.50	.00015236	.00444819	.01369612	.98170335	1.00000000
	.00022732J	.00001825J	.00203044J	-.00227602J	.00000000
	.00027366M	.00444823M	.01384581M	.98170598M	
35.75	.00015866	.00466748	.01544835	.97972549	.99999998
	.00013995J	.00001445J	.00219961J	-.00235402J	-.00000000
	.00021156M	.00466750M	.01560416M	.97972831M	
36.00	.00009209	.00487910	.01704180	.97798713	1.00000010
	.00005355J	.00000744J	.00175763J	-.00181863J	-.00000000
	.00010653M	.00487911M	.01713220M	.97798881M	
37.00	.00024714	.00565002	.02075744	.97334531	.99999992
	-.00000960J	.00001859J	-.00317855J	.00316956J	-.00000000
	.00024733M	.00565005M	.02099939M	.97335046M	
38.00	.00221400	.00630503	.01910421	.97237673	.99999998
	-.00112651J	.00019727J	-.00933056J	.01025980J	-.00000000
	.00248412M	.00630811M	.02126101M	.97243085M	
39.00	.00538916	.00683360	.01198274	.97579443	.99999994
	-.00650365J	.00069913J	-.01229502J	.01809954J	.00000000
	.00844634M	.00686927M	.01716839M	.97596227M	

39.25	.00598929	.00693691	.00937632	.97769751	1.00000000
	-.00916083J	.00091355J	-.01183549J	.02008278J	-.00000000
	.01094498M	.00699681M	.01509948M	.97790374M	
39.50	.00619271	.00701912	.00640835	.98037997	1.00000010
	-.01279546J	.00119523J	-.01044273J	.02204297J	.00000000
	.01421526M	.00712015M	.01225225M	.98062774M	
39.75	.00531466	.00705869	.00296171	.98466494	1.00000000
	-.01832117J	.00161302J	-.00721986J	.02392801J	-.00000000
	.01907645M	.00724064M	.00780373M	.98495562M	

IMAGINARY

40.00	-.00459614	.00753229	.00517810	.99188560	.99999985
	-.02241822J	.00247126J	.00068962J	.01925733J	-.00000000
	.02288452M	.00792733M	.00522382M	.99207251M	
41.00	-.01193168	.00958428	.01252204	.98982541	1.00000000
	-.01593316J	.00323020J	.00174441J	.01095854J	.00000000
	.01990554M	.01011398M	.01264296M	.98988606M	
42.00	-.01491464	.01126534	.01562329	.98802604	1.00000000
	-.01462638J	.00394920J	.00218648J	.00849068J	-.00000000
	.02088965M	.01193751M	.01577555M	.98806252M	
43.00	-.01729149	.01292331	.01815668	.98621133	.99999983
	-.01456179J	.00472729J	.00244017J	.00739432J	-.00000000
	.02260623M	.01376078M	.01831992M	.98623904M	
44.00	-.01947919	.01459465	.02053438	.98435021	1.00000000
	-.01517784J	.00557900J	.00255349J	.00704534J	-.00000000
	.02469424M	.01562463M	.02069254M	.98437542M	
45.00	-.02160018	.01628186	.02288041	.98243798	1.00000000
	-.01628453J	.00651105J	.00254238J	.00723109J	.00000000
	.02705095M	.01753547M	.02302122M	.98246458M	
46.00	-.02370037	.01797666	.02524441	.98047938	1.00000000
	-.01780137J	.00752784J	.00241369J	.00785983J	-.00000000
	.02964113M	.01948920M	.02535954M	.98051087M	
47.00	-.02579749	.01966555	.02764919	.97848282	1.00000000
	-.01969178J	.00863263J	.00217061J	.00888854J	.00000000
	.03245423M	.02147688M	.02773426M	.97852318M	
48.00	-.02789653	.02133188	.03010586	.97645866	.99999987
	-.02193997J	.00982780J	.00181465J	.01029750J	-.00000000
	.03549054M	.02348691M	.03016050M	.97651294M	
49.00	-.02999566	.02295656	.03261973	.97441925	.99999989
	-.02454113J	.01111489J	.00134666J	.01207957J	-.00000000
	.03875573M	.02550577M	.03264752M	.97449411M	

50.00	-.03208896	.02451859	.03519318	.97237715	.99999996
	-.02749682J	.01249451J	.00076719J	.01423509J	-.00000000
	.04225845M	.02751861M	.03520154M	.97248133M	
51.00	-.03416769	.02599519	.03782679	.97034569	.99999998
	-.03081213J	.01396622J	.00007694J	.01676897J	.00000000
	.04600890M	.02950941M	.03782686M	.97049057M	
52.00	-.03622093	.02736202	.04052027	.96833865	1.00000000
	-.03449436J	.01552828J	-.00072313J	.01968921J	-.00000000
	.05001817M	.03146121M	.04052672M	.96853879M	
53.00	-.03823607	.02859335	.04327292	.96636968	.99999988
	-.03855219J	.01717757J	-.00163173J	.02300635J	-.00000000
	.05429796M	.03335639M	.04330367M	.96664349M	
54.00	-.04019880	.02966197	.04608377	.96445300	.99999994
	-.04299466J	.01890914J	-.00264695J	.02673246J	-.00000000
	.05885987M	.03517653M	.04615972M	.96482340M	
55.00	-.04209343	.03053961	.04895196	.96260189	1.00000000
	-.04783120J	.02071611J	-.00376637J	.03088147J	.00000001
	.06371562M	.03690291M	.04909663M	.96309711M	
56.00	-.04390273	.03119675	.05187670	.96082936	1.00000000
	-.05307065J	.02258911J	-.00498681J	.03546836J	.00000000
	.06887630M	.03851630M	.05211583M	.96148378M	
57.00	-.04560807	.03160313	.05485756	.95914741	1.00000000
	-.05872176J	.02451618J	-.00630455J	.04051014J	.00000000
	.07435282M	.03999751M	.05521865M	.96000251M	
58.00	-.04718929	.03172765	.05789433	.95756740	1.00000010
	-.06479198J	.02648203J	-.00771489J	.04602486J	.00000002
	.08015504M	.04132725M	.05840611M	.95867283M	
59.00	-.04862472	.03153887	.06098725	.95609856	.99999996
	-.07128787J	.02846772J	-.00921241J	.05203256J	.00000000
	.08629209M	.04248660M	.06167912M	.95751336M	
60.00	-.04989105	.03100526	.06413697	.95474867	.99999985
	-.07821443J	.03045012J	-.01079061J	.05855493J	.00000001
	.09277184M	.04345729M	.06503836M	.95654257M	
61.00	-.05096323	.03009566	.06734441	.95352317	1.00000000
	-.08557464J	.03240103J	-.01244195J	.06561559J	.00000002
	.09960055M	.04422189M	.06848410M	.95577813M	
62.00	-.05181442	.02877998	.07061099	.95242339	.99999994
	-.09336974J	.03428678J	-.01415790J	.07324085J	-.00000000
	.10678315M	.04476461M	.07201637M	.95523532M	
63.00	-.05241580	.02702979	.07393821	.95144778	.99999998
	-.10159763J	.03606703J	-.01592834J	.08145897J	.00000003
	.11432188M	.04507150M	.07563446M	.95492849M	

64.00	-.05273646	.02481954	.07732790	.95058900	.99999998
	-.11025339J	.03769412J	-.01774182J	.09030112J	.00000002
	.12221679M	.04513154M	.07933711M	.95486844M	
65.00	-.05274342	.02212782	.08078186	.94983378	1.00000000
	-.11932792J	.03911185J	-.01958513J	.09980126J	.00000006
	.13046463M	.04493748M	.08312211M	.95506256M	
66.00	-.05240119	.01893893	.08430155	.94916059	.99999988
	-.12880736J	.04025426J	-.02144311J	.10999623J	.00000002
	.13905833M	.04448695M	.08698596M	.95551295M	
67.00	-.05167199	.01524547	.08788814	.94853832	.99999995
	-.13867206J	.04104457J	-.02329834J	.12092582J	-.00000001
	.14798626M	.04378448M	.09092380M	.95621545M	
68.00	-.05051547	.01105090	.09154158	.94792299	1.00000000
	-.14889513J	.04139333J	-.02513070J	.13263253J	.00000003
	.15723095M	.04284309M	.09492846M	.95715692M	
69.00	-.04888876	.00637365	.09526057	.94725454	.99999999
	-.15944127J	.04119736J	-.02691720J	.14516114J	.00000003
	.16676819M	.04168747M	.09899047M	.95831253M	
70.00	-.04674648	.00125189	.09904138	.94645315	.99999995
	-.17026438J	.04033783J	-.02863130J	.15855787J	.00000002
	.17656497M	.04035726M	.10309678M	.95964272M	
71.00	-.04404111	-.00424988	.10287713	.94541385	.99999999
	-.18130515J	.03867881J	-.03024233J	.17286871J	.00000004
	.18657753M	.03891159M	.10723014M	.96108841M	
72.00	-.04072325	-.01003246	.10675637	.94399944	1.00000000
	-.19248838J	.03606613J	-.03171518J	.18813749J	.00000006
	.19674897M	.03743549M	.11136774M	.96256462M	
73.00	-.03674244	-.01595104	.11066150	.94203186	.999999=8
	-.20371896J	.03232622J	-.03300947J	.20440220J	-.00000001
	.20700585M	.03604747M	.11547983M	.96395242M	
74.00	-.03204851	-.02180072	.11456650	.93928263	.99999989
	-.21487709J	.02726630J	-.03407888J	.22168970J	.00000003
	.21725393M	.03491021M	.11952762M	.96508972M	
75.00	-.02659361	-.02729796	.11843370	.93545782	.99999994
	-.22581173J	.02067524J	-.03487069J	.24000722J	.00000004
	.22737228M	.03424389M	.12346054M	.96575607M	
76.00	-.02033515	-.03205618	.12221013	.93018120	1.00000000
	-.23633386J	.01232768J	-.03532514J	.25933138J	.00000006
	.23720710M	.03434488M	.12721313M	.96565512M	
77.00	-.01324030	-.03555410	.12582248	.92297188	.99999995
	-.24620701J	.00199143J	-.03537556J	.27959113J	-.00000001
	.24656276M	.03560983M	.13070090M	.96439011M	

78.00	-.00529374	-.03709393	.12916979	.91321792	1.00000000
	-.25513381J	-.01055954J	-.03494810J	.30064151J	.00000006
	.25518872M	.03856765M	.13381406M	.96143241M	
79.00	.00349275	-.03574765	.13211489	.90014014	1.00000010
	-.26274241J	-.02552166J	-.03396372J	.32222781J	.00000002
	.26276562M	.04392322M	.13641069M	.95607689M	
80.00	.01306442	-.03028652	.13447224	.88274982	.99999996
	-.26856705J	-.04302493J	-.03234053J	.34393248J	-.00000003
	.26888462M	.05261576M	.13830651M	.94738418M	
81.00	.02330029	-.01909026	.13599226	.85979777	1.00000000
	-.27202411J	-.06307218J	-.02999902J	.36509536J	.00000005
	.27302018M	.06589793M	.13926175M	.93410215M	
82.00	.03397953	-.00003040	.13634077	.82971011	1.00000000
	-.27238400J	-.08544380J	-.02687235J	.38470016J	.00000001
	.27449526M	.08544380M	.13896376M	.91455622M	
83.00	.04473042	.02967791	.13507197	.79051967	.99999997
	-.26873603J	-.10954808J	-.02292189J	.40120595J	-.00000005
	.27243322M	.11349696M	.13700310M	.88650299M	
84.00	.05495552	.07365927	.13159370	.73979157	1.00000000
	-.25994847J	-.13418691J	-.01816467J	.41230013J	.00000008
	.26569402M	.15307454M	.13284147M	.84692559M	
85.00	.06371943	.13659827	.12512320	.67455907	.99999997
	-.24462421J	-.15719105J	-.01271811J	.41453342J	.00000005
	.25278680M	.20825012M	.12576790M	.79174989M	
86.00	.06958279	.22448491	.11463319	.59129906	.99999995
	-.22106063J	-.17485448J	-.00687134J	.40278648J	.00000003
	.23175324M	.28454799M	.11483894M	.71545197M	
87.00	.07035421	.34485323	.09878879	.48600368	.99999991
	-.18722294J	-.18105838J	-.00120133J	.36948265J	.00000000
	.20000535M	.38949439M	.09879610M	.61050553M	
88.00	.06272473	.50692583	.07588376	.35446563	.99999995
	-.14076471J	-.16592414J	.00324323J	.30344562J	.00000000
	.15410741M	.53338974M	.07595304M	.46661024M	
89.00	.04173291	.72147514	.04379472	.19299728	1.00000000
	-.07915109J	-.11376146J	.00465161J	.18826095J	.00000001
	.08947922M	.73038897M	.04404106M	.26961108M	
90.00	-.00000018	1.00000120	-.00000018	-.00000087	1.00000020
	.00000031J	.00000058J	-.00000004J	-.00000088J	-.00000003
	.00000036M	1.00000110M	.00000018M	.00000124M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	1.000

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.03114187	.00000000	.96885818	1.00000000
1.00	.00008749	.03102277	.00006135	.96882815	.99999977
2.00	.00034842	.03066710	.00024550	.96873900	1.00000000
3.00	.00077806	.03007980	.00055279	.96858911	.99999977
4.00	.00136864	.02926925	.00098373	.96837833	.99999995
5.00	.00210938	.02824678	.00153908	.96810467	.99999992
6.00	.00298667	.02702693	.00221981	.96776647	.99999989
7.00	.00398418	.02562713	.00302715	.96736137	.99999983
8.00	.00508310	.02406753	.00396254	.96688670	.99999988
9.00	.00626238	.02237079	.00502769	.96633898	.99999985
10.00	.00749892	.02056185	.00622460	.96571447	.99999986
11.00	.00876801	.01866767	.00755554	.96500856	.99999979
12.00	.01004353	.01671691	.00902312	.96421621	.99999977
13.00	.01129838	.01473958	.01063029	.96333154	.99999980
14.00	.01250490	.01276671	.01238039	.96234776	.99999976
15.00	.01363524	.01083002	.01427719	.96125736	.99999983
16.00	.01466188	.00896145	.01632497	.96005145	.99999976
17.00	.01555807	.00719278	.01852853	.95872045	.99999984
18.00	.01629836	.00555516	.02089336	.95725281	.99999970
19.00	.01685922	.00407874	.02342570	.95563611	.99999978
20.00	.01721950	.00279211	.02613270	.95385557	.99999989

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21.00	.01736114	.00172188	.02902258	.95189437	.99999997
22.00	.01726980	.00089216	.03210493	.94973302	.99999991
23.00	.01693555	.00032408	.03539094	.94734939	.99999997
24.00	.01635363	.00003527	.03889391	.94471699	.99999982
25.00	.01552521	.00003934	.04262981	.94180550	.99999987
26.00	.01445833	.00034530	.04661806	.93857811	.99999981
27.00	.01316880	.00095710	.05088269	.93499141	1.00000000
28.00	.01168131	.00187296	.05545409	.93099146	.99999983
29.00	.01003080	.00308483	.06037134	.92651302	1.00000000
30.00	.00826379	.00457766	.06568638	.92147199	.99999982
31.00	.00644035	.00632863	.07146993	.91576112	1.00000000
32.00	.00463637	.00830618	.07782187	.90923549	.99999991
33.00	.00294645	.01046860	.08488739	.90169744	.99999989
34.00	.00148677	.01276164	.09287044	.89288099	.99999984
35.00	.00037720	.01511098	.10165935	.88285236	.99999990
35.25	.00008271	.01568431	.10243611	.88179682	.99999995

IMAGINARY

35.50	.00009324	.01628747	.10726367	.87635555	.99999993
	.00020106J	.00002828J	.00419609J	-.00442544J	.00000000
	.00022163M	.01628749M	.10734571M	.87636672M	
35.75	.00009265	.01688148	.11314522	.86988063	.99999999
	.00012952J	.00002069J	.00429026J	-.00444047J	.00000000
	.00015925M	.01688149M	.11322652M	.86989195M	
36.00	.00004749	.01745494	.11870824	.86378926	.99999993
	.00004984J	.00000909J	.00314149J	-.00320044J	.00000000
	.00006884M	.01745494M	.11874979M	.86379518M	
37.00	.00026073	.01955028	.13729103	.84289801	1.00000000
	.00011693J	.00003995J	-.00787039J	.00771350J	-.00000000
	.00028575M	.01955032M	.13751643M	.84293330M	
38.00	.00222883	.02135173	.14967113	.82674824	.99999994
	.00034816J	.00032964J	-.02392160J	.02324379J	-.00000000
	.00225586M	.02135427M	.15157073M	.82707491M	

39.00	.00643374	.02288967	.15629620	.81438037	.99999999
	-.00032806J	.00097486J	-.04141255J	.04076575J	-.00000000
	.00644210M	.02291042M	.16168952M	.81540004M	
40.00	.01267973	.02418238	.15813115	.80500679	1.00000000
	-.00280319J	.00202115J	-.05836072J	.05914276J	.00000000
	.01298589M	.02426670M	.16855691M	.80717643M	
41.00	.02051991	.02523129	.15624750	.79800136	1.00000000
	-.00762596J	.00348551J	-.07366825J	.07780872J	.00000001
	.02189114M	.02547090M	.17274342M	.80178573M	
42.00	.02947810	.02602081	.15162550	.79287555	.99999996
	-.01505779J	.00536759J	-.08678924J	.09647945J	.00000000
	.03310129M	.02656866M	.17470736M	.79872393M	
43.00	.03914736	.02652031	.14507940	.78925289	.99999996
	-.02516493J	.00765572J	-.09751499J	.11502421J	.00000001
	.04653804M	.02760320M	.17480619M	.79759054M	
44.00	.04922201	.02668614	.13724548	.78684636	.99999999
	-.03789870J	.01032996J	-.10583028J	.13339903J	.00000001
	.06212179M	.02861570M	.17331004M	.79807423M	
45.00	.05949748	.02646353	.12859826	.78544075	1.00000000
	-.05315377J	.01336326J	-.11181961J	.15161013J	.00000001
	.07978267M	.02964617M	.17041460M	.79993924M	
46.00	.06985731	.02578800	.11947529	.78487934	.99999994
	-.07080776J	.01672162J	-.11560738J	.16969351J	-.00000001
	.09946750M	.03073489M	.16625104M	.80301398M	
47.00	.08025592	.02458597	.11010236	.78505574	1.00000000
	-.09074694J	.02036346J	-.11731970J	.18770318J	.00000000
	.12114463M	.03192398M	.16089264M	.80718336M	
48.00	.09070245	.02277434	.10061352	.78590960	.99999991
	-.11288530J	.02423869J	-.11705861J	.20570519J	-.00000003
	.14481030M	.03325935M	.15435607M	.81238446M	
49.00	.10124581	.02025901	.09106570	.78742950	1.00000000
	-.13718093J	.02828731J	-.11488180J	.22377541J	-.00000001
	.17049727M	.03479367M	.14659737M	.81860897M	
50.00	.11196230	.01693092	.08144495	.78966183	1.00000000
	-.16365818J	.03243798J	-.11078047J	.24200065J	-.00000002
	.19829159M	.03659069M	.13749761M	.82591169M	
51.00	.12294279	.01265753	.07166145	.79273817	.99999994
	-.19244536J	.03660604J	-.10464455J	.26048389J	.00000002
	.22836406M	.03873261M	.12682998M	.83443733M	
52.00	.13427722	.00726414	.06152474	.79693387	.99999997
	-.22385380J	.04069128J	-.09619438J	.27935690J	.00000000
	.26103811M	.04133459M	.11418692M	.84447845M	

53.00	.14602489	.00048632	.05066969	.80281900	.99999990
	-.25857321J	.04457535J	-.08481376J	.29881160J	-.00000002
	.29695685M	.04457801M	.09879672M	.85662519M	
54.00	.15812368	-.00817890	.03831674	.81173841	.99999993
	-.29828722J	.04812012J	-.06902709J	.31919414J	-.00000005
	.33760681M	.04881025M	.07894880M	.87224087M	
55.00	.16987033	-.02025659	.02201940	.82836675	.99999989
	-.34894465J	.05119037J	-.04372508J	.34147933J	-.00000003
	.38809572M	.05505255M	.04895648M	.89599084M	
55.25	.17227310	-.02454745	.01615165	.83612269	.99999999
	-.36637286J	.05189296J	-.03331273J	.34779260J	-.00000003
	.40485440M	.05740607M	.03702181M	.90557210M	
55.50	.17330659	-.03087396	.00716215	.85040519	.99999997
	-.39218266J	.05266464J	-.01576495J	.35528299J	.00000002
	.42876848M	.06104724M	.01731560M	.92163712M	

IMAGINARY

55.75	.14390838	-.03594710	.02599888	.86603985	1.00000000
	-.40869003J	.06058456J	.01039987J	.33770563J	.00000003
	.43328646M	.07044631M	.02800177M	.92955371M	
56.00	.13286342	-.03704306	.03932317	.86485650	1.00000000
	-.40928816J	.06473822J	.01528947J	.32926039J	-.00000008
	.43031323M	.07458703M	.04219099M	.92541297M	
57.00	.11736198	-.04293712	.06890943	.85666564	.99999993
	-.41846861J	.07469885J	.02560666J	.31816303J	-.00000007
	.43461455M	.08615982M	.07351334M	.91384010M	
58.00	.11584155	-.05036022	.08777735	.84674130	.99999998
	-.43137703J	.08118298J	.03225207J	.31794193J	-.00000005
	.44666027M	.09553444M	.09351502M	.90446553M	
59.00	.12060712	-.05903703	.10254110	.83588884	1.00000000
	-.44591657J	.08576174J	.03782669J	.32232811J	-.00000003
	.46193902M	.10411747M	.10929563M	.89588255M	
60.00	.12964138	-.06885358	.11495897	.82425316	.99999993
	-.46130059J	.08870904J	.04300506J	.32958642J	-.00000007
	.47917127M	.11229474M	.12273956M	.88770517M	
61.00	.14209224	-.07971753	.12577798	.81184731	1.00000000
	-.47703064J	.09002351J	.04808100J	.33892608J	-.00000005
	.49774333M	.12024607M	.13465468M	.87975390M	
62.00	.15751887	-.09152727	.13537595	.79863236	.99999991
	-.49270891J	.08959746J	.05321489J	.34989652J	-.00000004
	.51727580M	.12808179M	.14545952M	.87191812M	

63.00	.17565654	-.10415728	.14395793	.78454268	.99999987
	-.50797446J	.08726888J	.05850630J	.36219923J	-.00000005
	.53748792M	.13588449M	.15539264M	.86411544M	
64.00	.19632068	-.11744901	.15163481	.76949359	1.00000000
	-.52247641J	.08284385J	.06402157J	.37561102J	.00000003
	.55814281M	.14372673M	.16459610M	.85627333M	
65.00	.21935887	-.13120315	.15845957	.75338465	.99999994
	-.53586086J	.07610928J	.06980542J	.38994615J	-.00000001
	.57902087M	.15168022M	.17315377M	.84831976M	
66.00	.24462164	-.14517182	.16444698	.73610320	1.00000000
	-.54776320J	.06684196J	.07588654J	.40503465J	-.00000005
	.59990354M	.15982085M	.18111205M	.84017914M	
67.00	.27194278	-.15905120	.16958367	.71752475	1.00000000
	-.55780477J	.05481727J	.08227946J	.42070791J	-.00000013
	.62056347M	.16823262M	.18849013M	.83176734M	
68.00	.30112422	-.17247404	.17383490	.69751490	.99999998
	-.56559189J	.03981833J	.08898486J	.43678865J	-.00000005
	.64075734M	.17701071M	.19528665M	.82298928M	
69.00	.33192280	-.18500219	.17714864	.67593079	1.00000000
	-.57071744J	.02164678J	.09598853J	.45308206J	-.00000007
	.66022053M	.18626430M	.20148310M	.81373569M	
70.00	.36403720	-.19611942	.17945862	.65262359	.99999999
	-.57276384J	.00013575J	.10326002J	.46936808J	.00000001
	.67866155M	.19611946M	.20704595M	.80388055M	
71.00	.39709523	-.20522432	.18068677	.62744236	1.00000000
	-.57130873J	-.02483477J	.11074998J	.48539353J	.00000001
	.69575734M	.20672152M	.21192750M	.79327851M	
72.00	.43064174	-.21162537	.18074587	.60023781	1.00000000
	-.56593355J	-.05331827J	.11838721J	.50086456J	-.00000005
	.71114913M	.21823871M	.21606619M	.78176130M	
73.00	.46412607	-.21453702	.17954215	.57086873	.99999993
	-.55623489J	-.08527942J	.12607535J	.51543891J	-.00000005
	.72443789M	.23086514M	.21938636M	.76913482M	
74.00	.49688864	-.21307894	.17697913	.53921107	.99999990
	-.54183999J	-.12056623J	.13368897J	.52871728J	.00000003
	.73517949M	.24482412M	.22179800M	.75517583M	
75.00	.52815023	-.20627977	.17296167	.50516780	.99999993
	-.52242665J	-.15887828J	.14106899J	.54023582J	-.00000012
	.74288106M	.26037214M	.22319542M	.73962777M	
76.00	.55700136	-.19308699	.16740211	.46868354	1.00000000
	-.49774780J	-.19972939J	.14801880J	.54945839J	.00000000
	.74699624M	.27780283M	.22345700M	.72219718M	

77.00	.58239652	-.17238501	.16022758	.42976094	1.00000000
	-.46766313J	-.24240628J	.15429979J	.55576970J	.00000008
	.74692336M	.29745150M	.22244393M	.70254852M	
78.00	.60314914	-.14302324	.15138942	.38848474	1.00000000
	-.43217591J	-.28592235J	.15962753J	.55847068J	-.00000005
	.74200061M	.31969865M	.21999932M	.68030132M	
79.00	.61793701	-.10385984	.14087531	.34504756	1.00000000
	-.39147754J	-.32896878J	.16366924J	.55677716J	.00000008
	.73150585M	.34497437M	.21594784M	.65502567M	
80.00	.62531602	-.05382005	.12872326	.29978072	.99999995
	-.34599742J	-.36986777J	.16604305J	.54982196J	-.00000018
	.71465679M	.37376297M	.21009514M	.62623691M	
81.00	.62374459	.00802143	.11503919	.25319484	1.00000000
	-.29646099J	-.40652520J	.16631983J	.53666637J	.00000001
	.69061307M	.40660432M	.20222833M	.59339566M	
82.00	.61162840	.08233707	.10001630	.20601830	1.00000000
	-.24394921J	-.43639784J	.16402910J	.51631788J	-.00000007
	.65848349M	.44409735M	.19211664M	.55590259M	
83.00	.58738188	.16941562	.08395710	.15924547	1.00000000
	-.18995937J	-.45647497J	.15867099J	.48776340J	.00000005
	.61733461M	.48689942M	.17951400M	.51310062M	
84.00	.54951741	.26900523	.06729599	.11418147	1.00000010
	-.13646035J	-.46328947J	.14973410J	.45001578J	.00000006
	.56620738M	.53572468M	.16416166M	.46427534M	
85.00	.49675991	.38013247	.05062139	.07248618	.99999995
	-.08593650J	-.45296856J	.13672357J	.40218155J	.00000006
	.50413836M	.59133849M	.14579389M	.40866152M	
86.00	.42819164	.50090504	.03469454	.03620876	.99999998
	-.04140735J	-.42133994J	.11919830J	.34354897J	-.00000002
	.43018907M	.65454809M	.12414485M	.34545182M	
87.00	.34342295	.62831186	.02046055	.00780461	.99999997
	-.00641206J	-.36410738J	.09681936J	.27370008J	.00000000
	.34348279M	.72618866M	.09895768M	.27381133M	
88.00	.24278430	.75804102	.00904868	-.00987401	.99999990
	.01505476J	-.27710804J	.06940910J	.19264421J	.00000003
	.24325061M	.80710287M	.06999644M	.19289709M	
89.00	.12752514	.88434654	.00175450	-.01362616	1.00000000
	.01867265J	-.15666066J	.03701873J	.10096925J	-.00000003
	.12888494M	.89811544M	.03706028M	.10188454M	
90.00	-.00000065	1.00000020	.00000000	.00000021	.99999981
	-.00000015J	.00000075J	-.00000015J	-.00000037J	.00000007
	.00000067M	1.00000010M	.00000015M	.00000043M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	1.000

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.01234568	.00000000	.98765432	1.00000000
1.00	.00003468	.01229667	.00002779	.98764074	.99999989
2.00	.00013807	.01215035	.00011125	.98760010	.99999979
3.00	.00030820	.01190878	.00025059	.98753210	.99999967
4.00	.00054179	.01157546	.00044613	.98743655	.99999994
5.00	.00083433	.01115517	.00069839	.98731190	.99999979
6.00	.00118008	.01065401	.00100798	.98715783	.99999991
7.00	.00157220	.01007928	.00137571	.98697258	.99999978
8.00	.00200276	.00943949	.00180252	.98675504	.99999982
9.00	.00246291	.00874418	.00228955	.98650325	.99999990
10.00	.00294294	.00800390	.00283812	.98621505	1.00000000
11.00	.00343241	.00723003	.00344973	.98588768	.99999986
12.00	.00392033	.00643471	.00412614	.98551858	.99999977
13.00	.00439529	.00563075	.00486933	.98510448	.99999985
14.00	.00484560	.00483133	.00568157	.98464124	.99999976
15.00	.00525958	.00405004	.00656545	.98412475	.99999983
16.00	.00562564	.00330059	.00752391	.98354968	.99999983
17.00	.00593260	.00259664	.00856032	.98291025	.99999982
18.00	.00616988	.00195172	.00967854	.98219971	.99999986
19.00	.00632779	.00137891	.01088304	.98141013	.99999987
20.00	.00639780	.00089072	.01217898	.98053246	.99999996

21.00	.00637288	.00049886	.01357241	.97955575	.99999991
22.00	.00624785	.00021402	.01507050	.97846751	.99999989
23.00	.00601977	.00004562	.01668180	.97725260	.99999981
24.00	.00568838	.00000159	.01841670	.97589329	.99999996
25.00	.00525660	.00008809	.02028797	.97436727	.99999994
26.00	.00473120	.00030925	.02231171	.97264766	.99999983
27.00	.00412347	.00066685	.02450855	.97070113	1.00000000
28.00	.00345012	.00115993	.02690585	.96848395	.99999987
29.00	.00273444	.00178445	.02954093	.96594009	.99999993
30.00	.00200769	.00253272	.03246701	.96299273	1.00000010
31.00	.00131100	.00339271	.03576415	.95953227	1.00000010
32.00	.00069781	.00434704	.03956201	.95539309	.99999996
33.00	.00023653	.00537121	.04409502	.95029714	.99999991
34.00	.00001026	.00642983	.04987634	.94368337	.99999982
35.00	.00006962	.00746278	.05876467	.93370294	1.00000000
35.25	.00004185	.00769673	.06330080	.92896045	.99999984

IMAGINARY

35.50	.00013166	.00792585	.06655009	.92539234	.99999995
	.00026278J	.00002616J	-.00406325J	.00377430J	-.00000000
	.00029392M	.00792589M	.06667401M	.92540003M	
35.75	.00037069	.00815280	.06868625	.92279029	1.00000000
	.00047305J	.00005426J	-.00692618J	.00639886J	.00000000
	.00060099M	.00815299M	.06903458M	.92281247M	
36.00	.00072460	.00837364	.07051367	.92038813	1.00000000
	.00068244J	.00009108J	-.00981425J	.00904072J	.00000000
	.00099538M	.00837413M	.07119338M	.92043252M	
37.00	.00340044	.00919858	.07477687	.91262414	1.00000000
	.00118614J	.00034546J	-.02198462J	.02045301J	.00000000
	.00360138M	.00920507M	.07794167M	.91285329M	
38.00	.00801435	.00993446	.07457681	.90747452	1.00000010
	.00033898J	.00080016J	-.03400584J	.03286669J	.00000000
	.00802151M	.00996663M	.08196401M	.90806949M	

39.00	.01412225	.01058042	.07073375	.90456355	.99999998
	-.00271023J	.00148275J	-.04455165J	.04577914J	.00000000
	.01437997M	.01068382M	.08359493M	.90572123M	
40.00	.02111186	.01112573	.06414457	.90361790	1.00000000
	-.00851013J	.00241489J	-.05279943J	.05889468J	.00000000
	.02276253M	.01138479M	.08308012M	.90553514M	
41.00	.02835620	.01154813	.05562090	.90447485	1.00000000
	-.01740611J	.00361810J	-.05827366J	.07206167J	-.00000000
	.03327232M	.01210165M	.08055746M	.90734096M	
42.00	.03525733	.01181136	.04582786	.90710347	1.00000000
	-.02967238J	.00511948J	-.06066517J	.08521807J	-.00000000
	.04608177M	.01287313M	.07602931M	.91109759M	
43.00	.04120762	.01185930	.03527364	.91165935	.99999992
	-.04567276J	.00696105J	-.05964928J	.09836099J	-.00000000
	.06151479M	.01375134M	.06929839M	.91695018M	
44.00	.04543368	.01159955	.02432020	.91864656	1.00000000
	-.06613569J	.00922182J	-.05461912J	.11153299J	.00000000
	.08023808M	.01481863M	.05978897M	.92539240M	
45.00	.04643996	.01084561	.01319542	.92951924	1.00000020
	-.09297589J	.01209594J	-.04395190J	.12483186J	.00000001
	.10392876M	.01624620M	.04588996M	.93786406M	
46.00	.03733849	.00885165	.00201137	.95179856	1.00000000
	-.13579715J	.01655083J	-.01929745J	.13854377J	.00000000
	.14083688M	.01876917M	.01940199M	.96182891M	

IMAGINARY

46.25	.01225618	.00854903	.00997738	.96921754	1.00000010
	-.15218203J	.02002932J	-.00027419J	.13242689J	-.00000001
	.15267476M	.02177751M	.00998115M	.97822263M	
46.50	-.00017749	.01021357	.02148394	.96848012	1.00000010
	-.14329643J	.02148842J	-.00078141J	.12258942J	.00000000
	.14329653M	.02379221M	.02149814M	.97620791M	
46.75	-.00655104	.01121074	.02766923	.96767108	1.00000000
	-.13928960J	.02254423J	-.00111450J	.11785986J	-.00000001
	.13944356M	.02517783M	.02769166M	.97482216M	
47.00	-.01105697	.01198787	.03222526	.96684396	1.00000010
	-.13688434J	.02348467J	-.00137605J	.11477574J	.00000002
	.13733018M	.02636738M	.03225462M	.97363273M	
48.00	-.02209759	.01416650	.04446688	.96346451	1.00000030
	-.13379101J	.02688403J	-.00210594J	.10901294J	.00000002
	.13560360M	.03038817M	.04451672M	.96961212M	

49.00	-.02865191	.01558922	.05304719	.96001557	1.00000000
	-.13544830J	.03014392J	-.00262663J	.10793102J	.00000001
	.13844556M	.03393641M	.05311218M	.96606365M	
50.00	-.03324272	.01652158	.06021491	.95650617	.99999994
	-.13955388J	.03341801J	-.00307719J	.10921306J	.00000000
	.14345857M	.03727903M	.06029349M	.96272090M	
51.00	-.03664395	.01702710	.06667975	.95293707	.99999997
	-.14531994J	.03673985J	-.00350579J	.11208587J	-.00000001
	.14986882M	.04049369M	.06677184M	.95950627M	
52.00	-.03917598	.01711404	.07275450	.94930744	1.00000000
	-.15237412J	.04010925J	-.00393042J	.11619530J	.00000001
	.15732968M	.04360782M	.07286059M	.95639215M	
53.00	-.04098548	.01676857	.07860142	.94561541	.99999991
	-.16050832J	.04351003J	-.00435527J	.12135356J	.00000000
	.16565847M	.04662947M	.07872199M	.95337043M	
54.00	-.04213741	.01596653	.08431332	.94185743	.99999988
	-.16959186J	.04691554J	-.00477689J	.12745319J	-.00000002
	.17474827M	.04955803M	.08444854M	.95044186M	
55.00	-.04265274	.01467876	.08994669	.93802724	.99999996
	-.17953430J	.05029045J	-.00518701J	.13443086J	.00000000
	.18453135M	.05238888M	.09009613M	.94761107M	
56.00	-.04252635	.01287401	.09553712	.93411527	1.00000000
	-.19026649J	.05359117J	-.00557390J	.14224920J	-.00000002
	.19496109M	.05511582M	.09569958M	.94488420M	
57.00	-.04173635	.01052107	.10110747	.93010777	.99999996
	-.20173066J	.05676594J	-.00592311J	.15088781J	-.00000002
	.20600286M	.05773270M	.10128081M	.94226726M	
58.00	-.04024942	.00759038	.10667214	.92598681	.99999991
	-.21387317J	.05975410J	-.00621785J	.16033689J	-.00000003
	.21762754M	.06023426M	.10685319M	.93976565M	
59.00	-.03802390	.00405568	.11223954	.92172859	.99999991
	-.22664120J	.06248586J	-.00643921J	.17059452J	-.00000003
	.22980872M	.06261734M	.11242409M	.93738256M	
60.00	-.03501205	-.00010442	.11781350	.91730289	.99999991
	-.23997919J	.06488143J	-.00656624J	.18166398J	-.00000002
	.24251980M	.06488152M	.11799633M	.93511838M	
61.00	-.03116170	-.00490462	.12339389	.91267237	.99999994
	-.25382593J	.06685019J	-.00657616J	.19355188J	-.00000002
	.25573160M	.06702986M	.12356899M	.93297008M	
62.00	-.02641716	-.01035067	.12897722	.90779052	.99999991
	-.26811352J	.06829038J	-.00644425J	.20626735J	-.00000004
	.26941181M	.06907034M	.12913810M	.93092956M	

63.00	-.02072082	-.01643719	.13455635	.90260158	.99999991
	-.28276419J	.06908791J	-.00614395J	.21982018J	-.00000005
	.28352237M	.07101634M	.13469654M	.92898359M	
64.00	-.01401415	-.02314449	.14012041	.89703825	1.00000000
	-.29768863J	.06911594J	-.00564688J	.23421960J	.00000003
	.29801831M	.07288814M	.14023414M	.92711188M	
65.00	-.00623887	-.03043527	.14565417	.89101999	1.00000000
	-.31278451J	.06823442J	-.00492304J	.24947314J	.00000001
	.31284672M	.07471440M	.14573734M	.92528560M	
66.00	.00266147	-.03825065	.15113785	.88445130	.99999997
	-.32793393J	.06628985J	-.00394071J	.26558477J	-.00000002
	.32794472M	.07653402M	.15118921M	.92346595M	
67.00	.01273933	-.04650490	.15654576	.87721984	1.00000000
	-.34300062J	.06311517J	-.00266683J	.28255230J	.00000002
	.34323711M	.07839790M	.15656847M	.92160211M	
68.00	.02404115	-.05507994	.16184542	.86919341	1.00000000
	-.35782803J	.05853042J	-.00106731J	.30036497J	.00000005
	.35863473M	.08037170M	.16184893M	.91962834M	
69.00	.03660422	-.06381822	.16699660	.86021743	1.00000000
	-.37223632J	.05234403J	.00089234J	.31899991J	-.00000004
	.37403173M	.08253886M	.16699898M	.91746115M	
70.00	.05045340	-.07251474	.17194947	.85011185	.99999999
	-.38601960J	.04435519J	.00324671J	.33841769J	-.00000001
	.38930279M	.08500453M	.17198011M	.91499545M	
71.00	.06559544	-.08090689	.17664301	.83866844	1.00000000
	-.39894210J	.03435714J	.00602896J	.35855602J	.00000002
	.40429884M	.08789959M	.17674586M	.91210041M	
72.00	.08201418	-.08866356	.18100296	.82564648	1.00000000
	-.41073568J	.02214311J	.00926963J	.37932291J	-.00000003
	.41884378M	.09138679M	.18124016M	.90861321M	
73.00	.09966237	-.09537170	.18493955	.81076979	1.00000000
	-.42109601J	.00751424J	.01299468J	.40058704J	-.00000005
	.43272904M	.09566726M	.18539551M	.90433269M	
74.00	.11845220	-.10052097	.18834488	.79372375	.99999986
	-.42967913J	-.00970894J	.01722254J	.42216556J	.00000003
	.44570738M	.10098875M	.18913066M	.89901120M	
75.00	.13824310	-.10348631	.19109023	.77415293	.99999995
	-.43609871J	-.02967016J	.02196070J	.44380808J	-.00000009
	.45748577M	.10765562M	.19234798M	.89234431M	
76.00	.15882744	-.10350908	.19302270	.75165907	1.00000010
	-.43992437J	-.05245506J	.02720079J	.46517873J	.00000009
	.46771743M	.11604164M	.19492984M	.88395848M	

77.00	.17991161	-.09967591	.19396255	.72580181	1.00000000
	-.44068129J	-.07806069J	.03291174J	.48583029J	.00000005
	.47599178M	.12660473M	.19673498M	.87339529M	
78.00	.20109217	-.09089710	.19370007	.69610475	.99999989
	-.43785159J	-.10635431J	.03903184J	.50517400J	-.00000006
	.48182161M	.13990540M	.19759352M	.86009452M	
79.00	.22182792	-.07588643	.19199394	.66206464	1.00000000
	-.43088097J	-.13701779J	.04545711J	.52244166J	.00000001
	.48462978M	.15662894M	.19730185M	.84337114M	
80.00	.24140647	-.05314363	.18856940	.62316783	1.00000000
	-.41919033J	-.16947634J	.05202733J	.53663935J	.00000001
	.48373299M	.17761327M	.19561508M	.82238672M	
81.00	.25890059	-.02094605	.18312011	.57892533	.99999998
	-.40219677J	-.20280151J	.05850760J	.54649069J	.00000001
	.47832180M	.20388033M	.19223973M	.79611972M	
82.00	.27312254	.02264500	.17531342	.52891900	.99999996
	-.37934653J	-.23559016J	.06456574J	.55037098J	.00000003
	.46743952M	.23667597M	.18682486M	.76332400M	
83.00	.28256814	.07975248	.16480068	.47287884	1.00000010
	-.35016726J	-.26580896J	.06974409J	.54623209J	-.00000004
	.44995762M	.27751551M	.17895111M	.72248453M	
84.00	.28536007	.15260987	.15123715	.41079302	1.00000010
	-.31434317J	-.29060335J	.07342645J	.53152014J	.00000007
	.42454916M	.32823782M	.16811936M	.67176228M	
85.00	.27918847	.24342473	.13431517	.34307155	.99999992
	-.27182544J	-.30606682J	.07479915J	.50309305J	-.00000006
	.38966045M	.39106583M	.15373834M	.60893407M	
86.00	.26126522	.35414665	.11381510	.27077294	.99999991
	-.22298536J	-.30697830J	.07281045J	.45715319J	-.00000002
	.34348505M	.46867421M	.13511194M	.53132571M	
87.00	.22830074	.48610186	.08968195	.19591538	.99999993
	-.16882234J	-.28652036J	.06612965J	.38921310J	.00000005
	.28394050M	.56425962M	.11142703M	.43574036M	
88.00	.17653208	.63944280	.06213527	.12188984	.99999999
	-.11123637J	-.23601631J	.05311716J	.29413553J	.00000001
	.20865546M	.68160896M	.08174488M	.31839101M	
89.00	.10183919	.81235885	.03181949	.05398247	1.00000000
	-.05336833J	-.14475273J	.03181774J	.16630327J	-.00000005
	.11497564M	.82515468M	.04499832M	.17484531M	
90.00	-.00000074	1.00000060	-.00000016	.00000012	.99999986
	.00000028J	.00000084J	-.00000016J	-.00000077J	.00000018
	.00000080M	1.00000050M	.00000023M	.00000079M	

ENERGY RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	1.000

ANGLE	ERP	ERS	ETP	ETS	ENERGY
.00	.00000000	.00277008	.00000000	.99722997	1.00000000
1.00	.00000778	.00275869	.00000701	.99722642	.99999991
2.00	.00003097	.00272466	.00002809	.99721609	.99999981
3.00	.00006909	.00266849	.00006329	.99719881	.99999969
4.00	.00012139	.00259100	.00011273	.99717477	.99999990
5.00	.00018677	.00249332	.00017658	.99714315	.99999983
6.00	.00026389	.00237689	.00025506	.99710411	.99999995
7.00	.00035111	.00224343	.00034842	.99705697	.99999993
8.00	.00044655	.00209497	.00045699	.99700140	.99999992
9.00	.00054810	.00193377	.00058116	.99693685	.99999989
10.00	.00065344	.00176234	.00072137	.99686277	.99999992
11.00	.00076008	.00158339	.00087814	.99677813	.99999975
12.00	.00086539	.00139985	.00105208	.99668249	.99999982
13.00	.00096662	.00121477	.00124388	.99657464	.99999992
14.00	.00106099	.00103137	.00145431	.99645307	.99999975
15.00	.00114566	.00085294	.00168430	.99631687	.99999979
16.00	.00121787	.00068283	.00193487	.99616423	.99999982
17.00	.00127492	.00052443	.00220723	.99599331	.99999990
18.00	.00131428	.00038107	.00250277	.99580160	.99999973
19.00	.00133367	.00025607	.00282309	.99558718	1.00000000
20.00	.00133109	.00015260	.00317008	.99534613	.99999990

21.00	.00130499	.00007368	.00354599	.99507526	.99999993
22.00	.00125432	.00002214	.00395349	.99476979	.99999976
23.00	.00117874	.00000053	.00439583	.99442465	.99999977
24.00	.00107872	.00001106	.00487701	.99403300	.99999981
25.00	.00095580	.00005557	.00540207	.99358640	.99999985
26.00	.00081285	.00013539	.00597747	.99307424	.99999996
27.00	.00065447	.00025131	.00661177	.99248240	.99999996
28.00	.00048747	.00040341	.00731669	.99179244	1.00000000
29.00	.00032166	.00059096	.00810889	.99097858	1.00000010
30.00	.00017087	.00081214	.00901350	.99000338	.99999990
31.00	.00005464	.00106374	.01007087	.98881059	.99999984
32.00	.00000060	.00134054	.01135231	.98730638	.99999984
33.00	.00004759	.00163408	.01300237	.98531592	.99999996
34.00	.00024372	.00192933	.01539224	.98243463	.99999993
35.00	.00051988	.00218748	.02028980	.97700287	1.00000000
35.25	.00022618	.00221753	.02433021	.97322590	.99999982

IMAGINARY

35.50	.00065978	.00226659	.02533246	.97174119	1.00000000
	.00102858J	.00005818J	-.00576534J	.00467858J	.00000000
	.00122200M	.00226734M	.02598024M	.97175244M	
35.75	.00147149	.00232741	.02474756	.97145358	1.00000000
	.00137444J	.00009716J	-.00857496J	.00710335J	-.00000000
	.00201355M	.00232943M	.02619107M	.97147954M	
36.00	.00238685	.00238777	.02394976	.97127563	1.00000000
	.00150017J	.00013781J	-.01084079J	.00920281J	.00000000
	.00281914M	.00239174M	.02628905M	.97131922M	
37.00	.00678399	.00262529	.01891041	.97168037	1.00000000
	.00005815J	.00034836J	-.01714741J	.01674089J	.00000000
	.00678424M	.00264831M	.02552719M	.97182456M	
38.00	.01138901	.00285706	.01169532	.97405846	.99999987
	-.00509706J	.00067147J	-.01947097J	.02389656J	.00000000
	.01247756M	.00293491M	.02271341M	.97435153M	

39.00	.01404759	.00308330	.00358921	.97927987	.99999998
	-.01554807J	.00118406J	-.01654476J	.03090877J	-.00000000
	.02095417M	.00330284M	.01692960M	.97976752M	
39.25	.01382147	.00313965	.00166882	.98136999	.99999994
	-.01944111J	.00136651J	-.01456780J	.03264240J	-.00000000
	.02385351M	.00342415M	.01466308M	.98191271M	
39.50	.01275252	.00319716	-.00004466	.98409502	1.00000000
	-.02422577J	.00159272J	-.01173313J	.03436618J	-.00000000
	.02737727M	.00357192M	.01173321M	.98469489M	
39.75	.00977385	.00325989	-.00121879	.98818503	.99999998
	-.03070873J	.00191186J	-.00727622J	.03607309J	-.00000000
	.03222661M	.00377917M	.00737759M	.98884321M	

IMAGINARY

40.00	-.00317404	.00371402	.00438927	.99507070	.99999995
	-.03242025J	.00238426J	-.00200712J	.03204310J	-.00000000
	.03257525M	.00441346M	.00482641M	.99558649M	
41.00	-.00916608	.00478852	.01010101	.99427665	1.00000000
	-.02285753J	.00254130J	-.00420618J	.02452241J	.00000000
	.02462689M	.00542108M	.01094177M	.99457900M	
42.00	-.01126501	.00554028	.01218851	.99353632	1.00000010
	-.02062695J	.00280235J	-.00469095J	.02251554J	-.00000000
	.02350258M	.00620870M	.01306005M	.99379140M	
43.00	-.01280111	.00623333	.01377580	.99279180	.99999982
	-.01993006J	.00311512J	-.00499961J	.02181454J	-.00000000
	.02368704M	.00696838M	.01465500M	.99303143M	
44.00	-.01414593	.00689912	.01520832	.99203840	.99999990
	-.01996386J	.00346901J	-.00529767J	.02179251J	-.00000000
	.02446759M	.00772217M	.01610460M	.99227773M	
45.00	-.01541048	.00754361	.01658964	.99127727	1.00000000
	-.02045416J	.00385964J	-.00563058J	.02222510J	.00000000
	.02560967M	.00847366M	.01751912M	.99152638M	
46.00	-.01663854	.00816491	.01796165	.99051211	1.00000010
	-.02127924J	.00428454J	-.00601498J	.02300969J	.00000000
	.02701199M	.00922080M	.01894204M	.99077932M	
47.00	-.01784957	.00875764	.01934418	.98974768	.99999993
	-.02237749J	.00474195J	-.00645821J	.02409375J	.00000000
	.02862445M	.00995904M	.02039377M	.99004089M	
48.00	-.01905215	.00931451	.02074746	.98899016	.99999998
	-.02371536J	.00523014J	-.00696401J	.02544923J	.00000000
	.03042043M	.01068244M	.02188503M	.98931754M	

49.00	-.02024938	.00982688	.02217707	.98824547	1.00000000
	-.02527410J	.00574722J	-.00753454J	.02706142J	-.00000000
	.03238546M	.01138411M	.02342203M	.98861591M	
50.00	-.02144125	.01028524	.02363608	.98751987	.99999995
	-.02704339J	.00629088J	-.00817125J	.02892375J	-.00000000
	.03451191M	.01205659M	.02500867M	.98794335M	
51.00	-.02262570	.01067931	.02512613	.98682013	.99999987
	-.02901779J	.00685825J	-.00887505J	.03103459J	-.00000001
	.03679612M	.01269186M	.02664750M	.98730801M	
52.00	-.02379934	.01099827	.02664799	.98615315	1.00000000
	-.03119495J	.00744574J	-.00964657J	.03339576J	-.00000000
	.03923689M	.01328161M	.02834028M	.98671845M	
53.00	-.02495773	.01123082	.02820193	.98552500	1.00000000
	-.03357456J	.00804897J	-.01048619J	.03601178J	-.00000000
	.04183467M	.01381728M	.03008835M	.98618272M	
54.00	-.02609557	.01136533	.02978785	.98494244	1.00000000
	-.03615735J	.00866247J	-.01139395J	.03888880J	-.00000002
	.04459072M	.01429018M	.03189260M	.98570986M	
55.00	-.02720686	.01139008	.03140554	.98441116	.99999992
	-.03894477J	.00927970J	-.01236963J	.04203468J	-.00000001
	.04750693M	.01469173M	.03375375M	.98530819M	
56.00	-.02828491	.01129329	.03305462	.98393706	1.00000000
	-.04193840J	.00989271J	-.01341263J	.04545832J	-.00000000
	.05058523M	.01501346M	.03567221M	.98498659M	
57.00	-.02932249	.01106351	.03473477	.98352426	1.00000000
	-.04514014J	.01049207J	-.01452209J	.04917015J	-.00000000
	.05382788M	.01524746M	.03764831M	.98475259M	
58.00	-.03031164	.01068970	.03644551	.98317647	1.00000000
	-.04855125J	.01106655J	-.01569663J	.05318131J	-.00000001
	.05723652M	.01538630M	.03968198M	.98461374M	
59.00	-.03124388	.01016172	.03818649	.98289561	.99999995
	-.05217274J	.01160292J	-.01693447J	.05750430J	.00000001
	.06081262M	.01542363M	.04177301M	.98457631M	
60.00	-.03211013	.00947070	.03995738	.98268191	.99999987
	-.05600485J	.01208571J	-.01823328J	.06215243J	.00000000
	.06455698M	.01535443M	.04392089M	.98464544M	
61.00	-.03290059	.00860950	.04175778	.98253340	1.00000000
	-.06004670J	.01249677J	-.01959008J	.06714003J	.00000001
	.06846938M	.01517540M	.04612465M	.98482468M	
62.00	-.03360491	.00757350	.04358736	.98244402	.99999998
	-.06429661J	.01281515J	-.02100137J	.07248283J	.00000000
	.07254891M	.01488577M	.04838301M	.98511421M	

63.00	-.03421194	.00636130	.04544562	.98240509	1.00000000
	-.06875091J	.01301647J	-.02246264J	.07819710J	.00000001
	.07679287M	.01448774M	.05069393M	.98551232M	
64.00	-.03470991	.00497586	.04733203	.98240207	1.00000000
	-.07340447J	.01307271J	-.02396867J	.08430041J	-.00000001
	.08119726M	.01398768M	.05305486M	.98601236M	
65.00	-.03508626	.00342582	.04924576	.98241465	.99999997
	-.07824979J	.01295169J	-.02551305J	.09081117J	.00000001
	.08575591M	.01339711M	.05546225M	.98660285M	
66.00	-.03532767	.00172714	.05118567	.98241488	1.00000000
	-.08327668J	.01261656J	-.02708824J	.09774836J	-.00000001
	.09046022M	.01273423M	.05791154M	.98726578M	
67.00	-.03541998	-.00009472	.05315003	.98236459	.99999991
	-.08847178J	.01202543J	-.02868526J	.10513157J	-.00000004
	.09529864M	.01202580M	.06039677M	.98797410M	
68.00	-.03534826	-.00200217	.05513635	.98221408	.99999999
	-.09381764J	.01113079J·	-.03029339J	.11298024J	.00000000
	.10025591M	.01130943M	.06291030M	.98869056M	
69.00	-.03509673	-.00394204	.05714111	.98189768	1.00000000
	-.09929226J	.00987915J	-.03190014J	.12131326J	.00000001
	.10531255M	.01063660M	.06544254M	.98936340M	
70.00	-.03464880	-.00584122	.05915918	.98133083	.99999998
	-.10486768J	.00821066J	-.03349066J	.13014771J	.00000003
	.11044351M	.01007645M	.06798112M	.98992354M	
71.00	-.03398721	-.00760124	.06118348	.98040499	1.00000000
	-.11050885J	.00605886J	-.03504741J	.13949738J	-.00000002
	.11561719M	.00972053M	.07051056M	.99027948M	
72.00	-.03309409	-.00909117	.06320414	.97898118	1.00000000
	-.11617211J	.00335091J	-.03654985J	.14937107J	.00000002
	.12079394M	.00968907M	.07301134M	.99031099M	
73.00	-.03195120	-.01013884	.06520783	.97688226	1.00000000
	-.12180352J	.00000802J	-.03797385J	.15976938J	.00000003
	.12592448M	.01013884M	.07545909M	.98986120M	
74.00	-.03054037	-.01051935	.06717637	.97388321	.99999985
	-.12733619J	-.00405328J	-.03929109J	.17068061J	.00000005
	.13094739M	.01127324M	.07782323M	.98872664M	
75.00	-.02884398	-.00994059	.06908530	.96969924	.99999995
	-.13268706J	-.00891900J	-.04046832J	.18207439J	.00000001
	.13578597M	.01335530M	.08006537M	.98664466M	
76.00	-.02684581	-.00802472	.07090192	.96396869	1.00000000
	-.13775387J	-.01467367J	-.04146679J	.19389438J	.00000005
	.14034538M	.01672461M	.08213755M	.98327548M	

77.00	-.02453225	-.00428446	.07258304	.95623375	1.00000000
	-.14241076J	-.02139421J	-.04224154J	.20604651J	.00000000
	.14450832M	.02181900M	.08398003M	.97818103M	
78.00	-.02189433	.00190769	.07407106	.94591557	.99999998
	-.14650139J	-.02914051J	-.04274017J	.21838207J	.00000000
	.14812838M	.02920288M	.08551751M	.97079709M	
79.00	-.01893011	.01135817	.07529041	.93228170	1.00000010
	-.14983300J	-.03794044J	-.04290250J	.23067602J	.00000008
	.15102409M	.03960411M	.08665605M	.96039605M	
80.00	-.01564852	.02510332	.07614137	.91440382	.99999999
	-.15216700J	-.04776810J	-.04265978J	.24259490J	.00000002
	.15296951M	.05396265M	.08727752M	.94603733M	
81.00	-.01207529	.04447382	.07649300	.89110851	1.00000000
	-.15320723J	-.05851022J	-.04193397J	.25365143J	.00000001
	.15368235M	.07349399M	.08723324M	.92650602M	
82.00	-.00826040	.07117843	.07617328	.86090874	1.00000000
	-.15258629J	-.06991724J	-.04063836J	.26314194J	.00000005
	.15280971M	.09977369M	.08633566M	.90022638M	
83.00	-.00429017	.10741196	.07495655	.82192162	.99999996
	-.14984671J	-.08152996J	-.03867823J	.27005487J	-.00000003
	.14990810M	.13484978M	.08434744M	.86515014M	
84.00	-.00030395	.15599391	.07254634	.77176366	.99999996
	-.14441826J	-.09257105J	-.03595366J	.27294297J	.00000000
	.14441857M	.18139321M	.08096689M	.81860674M	
85.00	.00348105	.22054685	.06855321	.70741896	1.00000000
	-.13558826J	-.10178339J	-.03236493J	.26973664J	.00000006
	.13563293M	.24290074M	.07580918M	.75709935M	
86.00	.00673403	.30572420	.06246487	.62507698	1.00000000
	-.12246522J	-.10718995J	-.02782215J	.25747736J	.00000004
	.12265022M	.32397063M	.06838078M	.67602945M	
87.00	.00895664	.41749858	.05360663	.51993814	.99999999
	-.10393147J	-.10573370J	-.02226231J	.23192748J	.00000000
	.10431668M	.43067931M	.05804551M	.56932066M	
88.00	.00940455	.56352184	.04108867	.38598491	.99999997
	-.07858567J	-.09273753J	-.01567787J	.18700107J	.00000000
	.07914640M	.57110166M	.04397812M	.42889829M	
89.00	.00696900	.75356084	.02373664	.21573354	1.00000000
	-.04467246J	-.06108842J	-.00816455J	.11392544J	.00000001
	.04521278M	.75603288M	.02510155M	.24396714M	
90.00	-.00000000	1.00000100	-.00000006	-.00000103	1.00000000
	.00000010J	.00000023J	.00000000J	-.00000039J	-.00000006
	.00000010M	1.00000090M	.00000006M	.00000111M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	.700

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.34228186	.00000000	1.34228180	.99999989
2.00	.02704648	-.34010124	.01725680	1.34205030	.99999988
4.00	.05382065	-.33357851	.03453965	1.34135390	.99999996
6.00	.08005102	-.32277259	.05187462	1.34018590	.99999989
8.00	.10546773	-.30778122	.06928767	1.33853590	.99999993
10.00	.12980346	-.28874186	.08680457	1.33638860	1.00000000
12.00	.15279434	-.26583180	.10445059	1.33372390	.99999975
14.00	.17418114	-.23926916	.12224995	1.33051760	.99999977
16.00	.19371085	-.20931358	.14022471	1.32674000	.99999977
18.00	.21113889	-.17626775	.15839281	1.32235710	.99999982
20.00	.22623332	-.14047974	.17676404	1.31733120	.99999988
22.00	.23878221	-.10234610	.19533240	1.31162330	.99999988
24.00	.24860961	-.06231791	.21405967	1.30519960	.99999993
26.00	.25561126	-.02091038	.23283892	1.29804660	.99999988
26.25	.25628784	-.01566624	.23517958	1.29710250	1.00000000
26.50	.25692096	-.01041090	.23751649	1.29614770	1.00000000
26.75	.25751126	-.00514581	.23984886	1.29518250	1.00000000
27.00	.25805933	.00012762	.24217568	1.29420720	1.00000000
27.25	.25856580	.00540809	.24449587	1.29322200	.99999985
27.50	.25903158	.01069416	.24680802	1.29222770	.99999999
27.75	.25945768	.01598442	.24911088	1.29122450	1.00000000

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28.00	.25984524	.02127737	.25140277	1.29021290	.99999981
30.00	.26179978	.06351374	.26905546	1.28193510	.99999990
32.00	.26340924	.10477261	.28366499	1.27411950	1.00000000
34.00	.27456691	.14273880	.28519513	1.27144570	.99999980
34.25	.27884325	.14686879	.28225558	1.27252290	.99999999
34.75	.29431624	.15390289	.26928106	1.27799130	.99999985
35.00	.31055150	.15597377	.25417389	1.28476970	.99999985
35.25	.36043752	.15228454	.20496476	1.30746400	.99999991

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35.50	.35160571	.15920790	.21580446	1.30256020	1.00000010
	-.08872244J	.01509685J	.08978539J	-.04193434J	.00000000
	.36262687M	.15992207M	.23373699M	1.30323500M	
35.75	.32123160	.16952030	.24813992	1.28743100	.99999993
	-.11855952J	.01939970J	.11919084J	-.05620539J	-.00000000
	.34241217M	.17062672M	.27528144M	1.28865720M	
36.00	.29276898	.17911049	.27812276	1.27313730	1.00000000
	-.13548989J	.02127643J	.13531673J	-.06442387J	-.00000000
	.32260065M	.18036977M	.30929417M	1.27476620M	
36.25	.26615885	.18801935	.30585467	1.25965910	.99999982
	-.14525126J	.02184193J	.14411418J	-.06927105J	.00000001
	.30321355M	.18928377M	.33810644M	1.26156220M	
36.50	.24133097	.19628861	.33144623	1.24697140	.99999985
	-.15022177J	.02157926J	.14806965J	-.07185398J	-.00000000
	.28426610M	.19747121M	.36301683M	1.24903980M	
36.75	.21820849	.20395972	.35501216	1.23504520	1.00000010
	-.15171771J	.02076432J	.14856624J	-.07278379J	-.00000000
	.26576908M	.20501396M	.38484483M	1.23718790M	
37.00	.19670869	.21107374	.37667025	1.22384770	.99999993
	-.15058209J	.01957724J	.14649140J	-.07245145J	-.00000000
	.24772822M	.21197969M	.40415369M	1.22599030M	
38.00	.12522786	.23472442	.44653838	1.18565760	.99999988
	-.12948538J	.01320501J	.12272267J	-.06303072J	.00000000
	.18013461M	.23509556M	.46309542M	1.18733170M	
40.00	.03522947	.26550974	.52708294	1.13391980	1.00000000
	-.05522196J	.00237394J	.04970292J	-.02750565J	.00000000
	.06550252M	.26552035M	.52942120M	1.13425330M	

40.25	.02758794	.26828558	.53325017	1.12917690	.99999997
	-.04513636J	.00159533J	.04036601J	-.02254639J	-.00000000
	.05289977M	.26829032M	.53477579M	1.12940190M	
40.50	.02055899	.27088291	.53877202	1.12473390	.99999993
	-.03505841J	.00096904J	.03115347J	-.01756235J	-.00000000
	.04064190M	.27088464M	.53967195M	1.12487090M	
40.75	.01409541	.27331565	.54370197	1.12056970	.99999992
	-.02501959J	.00049731J	.02209147J	-.01256927J	.00000000
	.02871690M	.27331610M	.54415058M	1.12064010M	
41.00	.00815362	.27559605	.54808963	1.11666490	1.00000010
	-.01504643J	.00018136J	.01320121J	-.00758058J	.00000000
	.01711363M	.27559610M	.54824858M	1.11669060M	
41.25	.00269278	.27773537	.55198039	1.11300100	1.00000000
	-.00516019J	.00002152J	.00449871J	-.00260720J	.00000000
	.00582054M	.27773537M	.55199871M	1.11300390M	
41.50	-.00232476	.27974368	.55541641	1.10956120	1.00000010
	.00462122J	.00001742J	-.00400337J	.00234156J	.00000000
	.00517303M	.27974367M	.55543083M	1.10956360M	
41.75	-.00693421	.28163016	.55843661	1.10632940	1.00000000
	.01428392J	.00016816J	-.01229616J	.00725831J	.00000000
	.01587808M	.28163020M	.55857196M	1.10635310M	
42.00	-.01116797	.28340284	.56107650	1.10329120	.99999995
	.02381624J	.00047239J	-.02037298J	.01213674J	.00000000
	.02630470M	.28340323M	.56144624M	1.10335790M	
44.00	-.03469918	.29421626	.57194199	1.08450430	1.00000000
	.09466973J	.00818903J	-.07703421J	.04936287J	-.00000000
	.10082852M	.29433020M	.57710648M	1.08562700M	
46.00	-.04676165	.30031977	.57185189	1.07239360	1.00000000
	.15555970J	.02444731J	-.12052620J	.08300853J	-.00000000
	.16243605M	.30131318M	.58441521M	1.07560140M	
48.00	-.05347232	.30232404	.56706299	1.06427940	1.00000000
	.20753362J	.04817542J	-.15327624J	.11333149J	.00000000
	.21431167M	.30613836M	.58741299M	1.07029650M	
50.00	-.05810289	.29984408	.56091477	1.05906370	1.00000000
	.25221251J	.07870385J	-.17782670J	.14085415J	.00000001
	.25881865M	.31000124M	.58842816M	1.06838930M	
52.00	-.06235247	.29162065	.55550334	1.05712660	1.00000010
	.29137837J	.11601780J	-.19659363J	.16597370J	.00000001
	.29797514M	.31385145M	.58926480M	1.07007650M	
54.00	-.06684254	.27445009	.55326797	1.06224630	1.00000000
	.32785305J	.16191577J	-.21286378J	.18859843J	.00000000
	.33459757M	.31865272M	.59280387M	1.07885880M	

54.25	-.06738938	.27124591	.55349263	1.06405420	1.00000000
	.33256893J	.16861127J	-.21508808J	.19118130J	.00000000
	.33932787M	.31938080M	.59381560M	1.08109270M	
54.50	-.06790992	.26764896	.55393341	1.06639550	1.00000000
	.33745026J	.17566846J	-.21748871J	.19367606J	-.00000000
	.34421567M	.32014898M	.59509961M	1.08384030M	
54.75	-.06838298	.26353592	.55467288	1.06949290	1.00000000
	.34260275J	.18320939J	-.22017315J	.19605414J	.00000001
	.34936065M	.32096239M	.59677316M	1.08731420M	
55.00	-.06876719	.25867940	.55586415	1.07376350	1.00000000
	.34822500J	.19146312J	-.22334335J	.19826126J	-.00000004
	.35495009M	.32182782M	.59905525M	1.09191370M	
55.25	-.06896106	.25254891	.55786584	1.08019170	.99999999
	.35478971J	.20097106J	-.22747995J	.20016769J	-.00000003
	.36142960M	.32275425M	.60246279M	1.09858140M	
55.50	-.06849980	.24284134	.56223681	1.09309820	1.00000000
	.36439770J	.21411171J	-.23472258J	.20119735J	.00000002
	.37078012M	.32375259M	.60926588M	1.11146030M	

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55.75	-.05642904	.24801922	.55338873	1.09983520	1.00000000
	.36965299J	.23882461J	-.24912034J	.17797117J	.00000003
	.37393523M	.34431195M	.60687727M	1.11414140M	
56.00	-.05196908	.25462942	.54526672	1.09316870	1.00000010
	.36888551J	.24931113J	-.25188015J	.16835320J	.00000000
	.37252825M	.35635962M	.60063250M	1.10605630M	
58.00	-.04628951	.27323035	.51086300	1.04681310	1.00000020
	.36943797J	.30613327J	-.25445997J	.14761493J	.00000001
	.37232663M	.41033206M	.57072836M	1.05716970M	
60.00	-.05350086	.27280642	.48909964	1.00201360	1.00000010
	.37140641J	.35446413J	-.24862617J	.14940309J	-.00000005
	.37524000M	.44728979M	.54866513M	1.01309050M	
62.00	-.06534451	.26041579	.47139414	.95648143	.99999990
	.37202926J	.40097593J	-.23881855J	.15906051J	-.00000009
	.37772433M	.47811931M	.52843801M	.96961691M	
64.00	-.07967641	.23687699	.45551824	.90943658	1.00000010
	.37022884J	.44640082J	-.22585166J	.17310361J	.00000008
	.37870532M	.50535570M	.50843469M	.92576441M	
66.00	-.09534425	.20198817	.44028316	.86027012	1.00000000
	.36526488J	.49032416J	-.21005216J	.18973766J	-.00000010
	.37750357M	.53029897M	.48782288M	.88094554M	

68.00	-.11147575	.15520310	.42480337	.80838123	1.00000000
	.35653526J	.53171559J	-.19162525J	.20764744J	-.00000007
	.37355619M	.55390384M	.46602374M	.83462426M	

70.00	-.12724670	.09586307	.40826860	.75314619	1.00000010
	.34352330J	.56902137J	-.17076726J	.22562514J	-.00000010
	.36633315M	.57703989M	.44254344M	.78621617M	

72.00	-.14176885	.02334866	.38984802	.69393160	1.00000000
	.32579279J	.60014577J	-.14772978J	.24239280J	-.00000005
	.35530175M	.60059978M	.41689994M	.73504784M	

74.00	-.15402113	-.06275850	.36864718	.63013859	.99999990
	.30301351J	.62239709J	-.12288037J	.25648522J	.00000004
	.33991129M	.62555316M	.38858759M	.68033763M	

76.00	-.16280226	-.16246508	.34369660	.56128305	1.00000000
	.27501382J	.63243195J	-.09677211J	.26615659J	.00000004
	.31958906M	.65296636M	.35706048M	.62119078M	

78.00	-.16670725	-.27508394	.31397283	.48711810	1.00000010
	.24186342J	.62623974J	-.07022650J	.26930909J	.00000005
	.29375026M	.68399369M	.32173077M	.55660706M	

80.00	-.16413587	-.39886650	.27846195	.40781391	1.00000000
	.20398774J	.59921277J	-.04442652J	.26345617J	-.00000003
	.26182357M	.71982665M	.28198363M	.48551142M	

82.00	-.15335699	-.53056986	.23627957	.32419083	1.00000000
	.16230802J	.54637868J	-.02100520J	.24575412J	.00000006
	.22329858M	.76159965M	.23721140M	.40681048M	

84.00	-.13265385	-.66501317	.18686174	.23799665	1.00000010
	.11838945J	.46287663J	-.00210233J	.21314722J	.00000003
	.17780074M	.81024520M	.18687356M	.31949043M	

86.00	-.10057463	-.79476565	.13022467	.15216998	.99999997
	.07455153J	.34474673J	.00965917J	.16267828J	.00000008
	.12519259M	.86631561M	.13058240M	.22275530M	

88.00	-.05628880	-.91017576	.06726225	.07099448	1.00000000
	.03387234J	.19002769J	.01133385J	.09199251J	.00000003
	.06569448M	.92980128M	.06821046M	.11620172M	

90.00	.00000011	-1.00000010	-.00000013	-.00000014	1.00000000
	-.00000005J	-.00000039J	-.00000003J	-.00000018J	-.00000002
	.00000012M	1.00000000M	.00000014M	.00000024M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	.700

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.28205132	.00000000	1.28205130	1.00000000
2.00	.02210576	-.28030897	.01140494	1.28191640	.99999992
4.00	.04400239	-.27509592	.02283879	1.28151070	.99999982
6.00	.06548110	-.26645483	.03433071	1.28083070	.99999997
8.00	.08633382	-.25445656	.04591052	1.27987030	.99999992
10.00	.10635353	-.23920071	.05760883	1.27862120	.99999993
12.00	.12533461	-.22081613	.06945732	1.27707230	.99999995
14.00	.14307326	-.19946148	.08148888	1.27520990	.99999989
16.00	.15936813	-.17532585	.09373727	1.27301780	.99999971
18.00	.17402125	-.14863039	.10623648	1.27047750	.99999984
20.00	.18684019	-.11963017	.11901879	1.26756820	.99999983
22.00	.19764243	-.08861735	.13211009	1.26426860	.99999981
24.00	.20626552	-.05592598	.14551876	1.26056060	.99999994
26.00	.21259265	-.02194065	.15920890	1.25643670	1.00000000
26.25	.21321982	-.01762309	.16093464	1.25589250	.99999999
26.50	.21381084	-.01329314	.16266218	1.25534230	.99999988
26.75	.21436607	-.00895187	.16439105	1.25478620	.99999991
27.00	.21488579	-.00460025	.16612057	1.25422440	1.00000000
27.25	.21537053	-.00023945	.16785007	1.25365680	1.00000000
27.50	.21582067	.00412958	.16957854	1.25308380	.99999990
27.75	.21623701	.00850570	.17130507	1.25250590	1.00000010

28.00	.21662028	.01288780	.17302852	1.25192290	.99999995
30.00	.21867031	.04800456	.18648832	1.24714700	1.00000000
32.00	.22022578	.08263435	.19789585	1.24260080	.99999993
34.00	.22949683	.11508869	.19859424	1.24087250	.99999995
34.25	.23309647	.11872101	.19595294	1.24144490	.99999993
34.50	.23829780	.12212074	.19160320	1.24252020	.99999997
34.75	.24630861	.12513113	.18428593	1.24447100	.99999980
35.00	.26039647	.12732109	.17058668	1.24830420	.99999990
35.25	.30456572	.12541378	.12531377	1.26139950	.99999994

IMAGINARY

35.50	.29539558	.13120233	.13638332	1.25816140	.99999992
	-.07950201J	.01074349J	.08333413J	-.02445475J	.00000000
	.30590704M	.13164145M	.15982799M	1.25839900M	
35.75	.26703249	.13935108	.16734021	1.24900250	1.00000000
	-.10546259J	.01363877J	.10999505J	-.03251432J	-.00000000
	.28710400M	.14001692M	.20025398M	1.24942550M	
36.00	.24061499	.14690895	.19595038	1.24041570	.99999996
	-.11957487J	.01475936J	.12409422J	-.03694652J	.00000000
	.26868889M	.14764849M	.23193948M	1.24096570M	
36.25	.21606863	.15391230	.22232494	1.23238440	1.00000000
	-.12709553J	.01492872J	.13124608J	-.03935384J	-.00000000
	.25067693M	.15463460M	.25817419M	1.23301250M	
36.50	.19331004	.16039754	.24658234	1.22488820	.99999998
	-.13021725J	.01450736J	.13380634J	-.04040296J	.00000000
	.23307789M	.16105227M	.28054765M	1.22555430M	
36.75	.17225140	.16640039	.26884334	1.21790550	.99999990
	-.13015858J	.01370265J	.13308875J	-.04046402J	.00000002
	.21589766M	.16696362M	.29998225M	1.21857740M	
37.00	.15280098	.17195569	.28923015	1.21141310	1.00000010
	-.12770131J	.01265047J	.12993694J	-.03977459J	-.00000000
	.19913755M	.17242039M	.31707677M	1.21206580M	
38.00	.08925630	.19033988	.35440279	1.18986640	1.00000000
	-.10293090J	.00755364J	.10271913J	-.03227090J	.00000000
	.13624044M	.19048970M	.36898856M	1.19030390M	
40.00	.01347376	.21399089	.42743853	1.16343950	.99999992
	-.02507112J	.00044822J	.02409705J	-.00792102J	.00000000
	.02846232M	.21399135M	.42811722M	1.16346640M	

40.25	.00746647	.21609002	.43281883	1.16134160	.99999994
	-.01465006J	.00015413J	.01401694J	-.00463000J	-.00000000
	.01644300M	.21609007M	.43304573M	1.16135080M	
40.50	.00204715	.21804319	.43758128	1.15946500	.99999994
	-.00423241J	.00001296J	.00403127J	-.00133778J	.00000000
	.00470150M	.21804319M	.43759985M	1.15946570M	
40.75	-.00282832	.21986010	.44177749	1.15779920	.99999989
	.00615773J	.00002769J	-.00583894J	.00194621J	-.00000000
	.00677621M	.21986010M	.44181607M	1.15780080M	
41.00	-.00720053	.22154911	.44545513	1.15633530	1.00000000
	.01650148J	.00020073J	-.01557806J	.00521403J	.00000000
	.01800407M	.22154919M	.44572742M	1.15634700M	
41.25	-.01110690	.22311738	.44865786	1.15506510	.99999998
	.02678488J	.00053417J	-.02517548J	.00845903J	.00000000
	.02899643M	.22311801M	.44936363M	1.15509600M	
41.50	-.01458162	.22457100	.45142609	1.15398250	1.00000010
	.03699787J	.00102990J	-.03462455J	.01167556J	.00000000
	.03976765M	.22457335M	.45275198M	1.15404150M	
41.75	-.01765601	.22591505	.45379669	1.15308190	.99999989
	.04713432J	.00168983J	-.04392249J	.01485895J	.00000000
	.05033268M	.22592136M	.45591733M	1.15317760M	
42.00	-.02035834	.22715349	.45580368	1.15236040	1.00000010
	.05719093J	.00251596J	-.05306943J	.01800504J	.00000000
	.06070638M	.22716742M	.45888271M	1.15250100M	
44.00	-.03109283	.23334988	.46198055	1.15322310	1.00000000
	.13545709J	.01555857J	-.12187455J	.04147142J	.00000000
	.13897980M	.23386798M	.47778596M	1.15396850M	
44.25	-.03126613	.23360789	.46182577	1.15430940	.99999994
	.14521234J	.01810706J	-.13021803J	.04414767J	.00000000
	.14854021M	.23430858M	.47983306M	1.15515330M	
44.50	-.03118671	.23371606	.46151343	1.15569630	.99999996
	.15507480J	.02091208J	-.13862691J	.04675273J	.00000000
	.15817965M	.23464976M	.48188387M	1.15664150M	
44.75	-.03083799	.23364954	.46105095	1.15744070	1.00000000
	.16511495J	.02400749J	-.14717448J	.04927825J	.00000000
	.16797002M	.23487968M	.48397138M	1.15848920M	
45.00	-.03018843	.23337133	.46044101	1.15962760	1.00000010
	.17543674J	.02744381J	-.15596775J	.05171222J	-.00000000
	.17801514M	.23497944M	.48613974M	1.16078000M	
45.25	-.02917984	.23282240	.45967887	1.16239250	.99999992
	.18620278J	.03130073J	-.16517318J	.05403525J	.00000000
	.18847529M	.23491701M	.48845350M	1.16364770M	

45.50	-.02770075	.23189963	.45874523	1.16597290	.99999999
	.19769660J	.03571722J	-.17507994J	.05621341J	-.00000000
	.19962784M	.23463409M	.49101952M	1.16732710M	
45.75	-.02550754	.23039125	.45758397	1.17085710	.99999997
	.21050337J	.04097844J	-.18628403J	.05817669J	-.00000000
	.21204316M	.23400717M	.49404942M	1.17230140M	
46.00	-.02186782	.22768737	.45599919	1.17845160	1.00000000
	.22632404J	.04790306J	-.20051861J	.05972224J	-.00000000
	.22737803M	.23267196M	.49813950M	1.17996390M	
48.00	.04137492	.26857019	.38514132	1.16812510	.99999994
	.23917382J	.09694818J	-.22156693J	.01844410J	.00000000
	.24272618M	.28553265M	.44432616M	1.16827060M	
50.00	.04898956	.29768569	.36281036	1.14089760	1.00000010
	.24667989J	.12315806J	-.22414506J	.01292788J	-.00000000
	.25149740M	.32215628M	.42646495M	1.14097080M	
52.00	.04781908	.32043651	.34840133	1.11311100	1.00000000
	.25753382J	.14938893J	-.22710626J	.01488043J	.00000000
	.26193574M	.35354859M	.41588548M	1.11321040M	
54.00	.04233452	.33791448	.33738041	1.08445750	.99999994
	.26933335J	.17705210J	-.22925625J	.02143385J	.00000000
	.27264017M	.38148871M	.40790189M	1.08466930M	
56.00	.03411730	.35010072	.32823168	1.05484810	.99999995
	.28101960J	.20667680J	-.23010340J	.03156388J	-.00000002
	.28308303M	.40655357M	.40085360M	1.05532010M	
58.00	.02391829	.35663402	.32028612	1.02419140	.99999983
	.29192243J	.23850103J	-.22939037J	.04471921J	-.00000002
	.29290064M	.42903445M	.39395829M	1.02516720M	
60.00	.01216124	.35696798	.31318766	.99233513	.99999990
	.30152140J	.27259218J	-.22695910J	.06051099J	-.00000005
	.30176654M	.44914655M	.38677763M	.99417834M	
62.00	-.00087452	.35040656	.30670046	.95903903	.99999995
	.30935744J	.30887104J	-.22269431J	.07860704J	-.00000002
	.30935867M	.46710391M	.37902232M	.96225512M	
64.00	-.01496870	.33610322	.30062130	.92395736	1.00000000
	.31499042J	.34709957J	-.21649506J	.09868142J	-.00000002
	.31534588M	.48315989M	.37046358M	.92921215M	
66.00	-.02990941	.31304558	.29473070	.88662337	1.00000000
	.31797354J	.38684451J	-.20825892J	.12037795J	.00000000
	.31937711M	.49764063M	.36088496M	.89475798M	
68.00	-.04545472	.28003630	.28875801	.84643392	1.00000000
	.31783562J	.42741794J	-.19787473J	.14327218J	.00000003
	.32106947M	.51098573M	.35005083M	.85847381M	

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70.00	-.06129499	.23567730	.28235049	.80263457	1.00000000
	.31406830J	.46778630J	-.18522318J	.16682108J	.00000000
	.31999370M	.52380130M	.33768242M	.81978748M	
72.00	-.07700934	.17836825	.27503965	.75430816	1.00000010
	.30611821J	.50643974J	-.17018683J	.19029281J	-.00000001
	.31565613M	.53693243M	.32343524M	.77794096M	
74.00	-.09201070	.10633822	.26620272	.70037374	.99999980
	.29338879J	.54120916J	-.15267450J	.21266681J	-.00000011
	.30747837M	.55155703M	.30687683M	.73194982M	
76.00	-.10547292	.01774356	.25501832	.63961294	1.00000010
	.27525860J	.56901545J	-.13266798J	.23249276J	.00000004
	.29477420M	.56929202M	.28746327M	.68055682M	
78.00	-.11623939	-.08911335	.24042072	.57074740	.99999980
	.25113249J	.58555120J	-.11030278J	.24770178J	-.00000011
	.27672933M	.59229333M	.26451621M	.62218064M	
80.00	-.12271337	-.21535114	.22106659	.49262165	.99999990
	.22054811J	.58490780J	-.08600083J	.25536649J	.00000000
	.25238866M	.62329225M	.23720577M	.55487667M	
82.00	-.12275193	-.36074151	.19534438	.40455705	.99999990
	.18337407J	.55923642J	-.06067204J	.25144103J	-.00000006
	.22066736M	.66549215M	.20454956M	.47632866M	
84.00	-.11361572	-.52245517	.16148875	.30698161	.99999989
	.14014238J	.49865042J	-.03599408J	.23057012J	.00000006
	.18041180M	.72222686M	.16545147M	.38392744M	
86.00	-.09208858	-.69327738	.11789508	.20240254	.99999997
	.09253602J	.39179710J	-.01473423J	.18617927J	-.00000004
	.13054969M	.79632813M	.11881223M	.27500819M	
88.00	-.05495061	-.85956851	.06374894	.09665865	1.00000000
	.04396962J	.22776742J	-.00098181J	.11121742J	.00000002
	.07037682M	.88923338M	.06375650M	.14735063M	
90.00	.00000011	-1.00000020	-.00000013	-.00000022	1.00000000
	-.00000006J	-.00000047J	-.00000001J	-.00000022J	-.00000007
	.00000013M	1.00000010M	.00000013M	.00000031M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	.700

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.22699392	.00000000	1.22699390	1.00000000
2.00	.01758364	-.22568414	.00604622	1.22693450	.99999996
4.00	.03502556	-.22176374	.01211103	1.22675620	.99999986
6.00	.05218433	-.21526047	.01821318	1.22645800	.99999998
8.00	.06891918	-.20622021	.02437179	1.22603770	1.00000000
10.00	.08509034	-.19470743	.03060655	1.22549290	.99999989
12.00	.10055943	-.18080557	.03693762	1.22482040	.99999985
14.00	.11518990	-.16461714	.04338573	1.22401670	.99999979
16.00	.12884785	-.14626444	.04997171	1.22307780	.99999978
18.00	.14140324	-.12589057	.05671565	1.22200030	.99999988
20.00	.15273222	-.10366057	.06363436	1.22078130	.99999985
22.00	.16272207	-.07976406	.07073684	1.21942100	.99999988
24.00	.17128223	-.05441920	.07801209	1.21792480	.99999977
26.00	.17837039	-.02787968	.08540144	1.21631020	1.00000020
26.25	.17915449	-.02449265	.08632643	1.21610160	1.00000000
26.50	.17991677	-.02109223	.08725009	1.21589200	1.00000010
26.75	.18065770	-.01767919	.08817198	1.21568130	1.00000010
27.00	.18137765	-.01425409	.08909117	1.21546980	1.00000000
27.25	.18207737	-.01081774	.09000693	1.21525780	1.00000010
27.50	.18275755	-.00737100	.09091822	1.21504520	1.00000010
27.75	.18341902	-.00391449	.09182412	1.21483230	1.00000000

28.00	.18406272	-.00044894	.09272318	1.21461950	1.00000000
30.00	.18877358	.02748533	.09943703	1.21296080	1.00000000
32.00	.19413954	.05534311	.10369700	1.21164330	.99999995
34.00	.20914775	.08170727	.09577584	1.21204000	.99999984
34.25	.21382958	.08465249	.09163897	1.21250940	1.00000000
34.50	.22035038	.08739069	.08549385	1.21323770	.99999992
34.75	.23012105	.08977271	.07581863	1.21441620	.99999993
35.00	.24700289	.09138336	.05844188	1.21656730	.99999994
35.25	.29983695	.08900518	.00211679	1.22361100	.99999987

IMAGINARY

35.50	.28698715	.09441560	.01726481	1.22165590	.99999998
	-.09528142J	.01049793J	.10313504J	-.01292664J	-.00000000
	.30239076M	.09499743M	.10457011M	1.22172420M	
35.75	.25153581	.10204870	.05666797	1.21668790	.99999988
	-.12442983J	.01303059J	.13421949J	-.01675417J	.00000000
	.28062973M	.10287727M	.14569189M	1.21680320M	
36.00	.21911477	.10897802	.09252416	1.21221110	.99999991
	-.13869929J	.01374841J	.14909886J	-.01851780J	.00000000
	.25932368M	.10984182M	.17547418M	1.21235250M	
36.25	.18956131	.11525434	.12504738	1.20820680	.99999998
	-.14469132J	.01351045J	.15501336J	-.01913460J	.00000000
	.23847236M	.11604350M	.19916322M	1.20835830M	
36.50	.16270459	.12092669	.15445705	1.20465560	.99999997
	-.14518766J	.01269864J	.15502518J	-.01899555J	-.00000000
	.21806476M	.12159160M	.21883735M	1.20480530M	
36.75	.13837390	.12604128	.18096992	1.20153900	1.00000000
	-.14173637J	.01153451J	.15084169J	-.01832134J	.00000000
	.19808214M	.12656796M	.23559144M	1.20167860M	
37.00	.11640070	.13064090	.20479773	1.19883960	.99999993
	-.13532142J	.01016389J	.14354845J	-.01725489J	.00000000
	.17849652M	.13103567M	.25009651M	1.19896370M	
38.00	.04898214	.14459437	.27712567	1.19197640	.99999985
	-.09086178J	.00433613J	.09521396J	-.01072631J	-.00000000
	.10322361M	.14465937M	.29302616M	1.19202460M	
38.25	.03656933	.14710041	.29031122	1.19122650	.99999998
	-.07654025J	.00307158J	.07998173J	-.00878903J	-.00000000
	.08482762M	.14713247M	.30112735M	1.19125890M	

38.50	.02571582	.14924019	.30182054	1.19088430	.99999990
	-.06119810J	.00196610J	.06377990J	-.00679915J	.00000000
	.06638155M	.14925313M	.30848584M	1.19090360M	
38.75	.01635118	.15100741	.31175783	1.19098710	1.00000010
	-.04480584J	.00105781J	.04658073J	-.00478161J	-.00000000
	.04769617M	.15101111M	.31521851M	1.19099660M	
39.00	.00844280	.15237428	.32019451	1.19160400	.99999995
	-.02719720J	.00039198J	.02821176J	-.00275907J	.00000000
	.02847751M	.15237478M	.32143493M	1.19160710M	
39.25	.00202623	.15327150	.32714712	1.19287010	1.00000010
	-.00795724J	.00003380J	.00823872J	-.00075491J	-.00000000
	.00821117M	.15327150M	.32725083M	1.19287030M	
39.50	-.00270130	.15352639	.33250652	1.19508420	1.00000000
	.01393391J	.00010454J	-.01440858J	.00119987J	.00000000
	.01419334M	.15352642M	.33281855M	1.19508470M	
39.75	-.00491122	.15255448	.33568223	1.19920460	.99999998
	.04193330J	.00095588J	-.04336510J	.00303515J	.00000000
	.04221992M	.15255747M	.33847169M	1.19920840M	

IMAGINARY

40.00	.02559616	.15171894	.30540432	1.20677230	.99999983
	.07577811J	.00804195J	-.08038699J	-.00287116J	-.00000000
	.07998428M	.15193192M	.31580669M	1.20677570M	
40.25	.04416190	.15668891	.28529273	1.20512350	1.00000000
	.07370946J	.01174804J	-.07929778J	-.00780063J	-.00000000
	.08592647M	.15712870M	.29610822M	1.20514870M	
40.50	.05415254	.16099218	.27427130	1.20357550	1.00000000
	.07362014J	.01414253J	-.07971645J	-.01065398J	-.00000000
	.09139159M	.16161216M	.28562118M	1.20362260M	
40.75	.06098762	.16506565	.26658965	1.20204640	.99999995
	.07421420J	.01607772J	-.08064195J	-.01276479J	.00000000
	.09605851M	.16584680M	.27851959M	1.20211410M	
41.00	.06608370	.16901534	.26074059	1.20051620	1.00000000
	.07516497J	.01777021J	-.08182114J	-.01446882J	.00000000
	.10008410M	.16994694M	.27327706M	1.20060330M	
41.25	.07006148	.17288485	.25606224	1.19897610	1.00000010
	.07633458J	.01931312J	-.08314732J	-.01590890J	.00000000
	.10361263M	.17396024M	.26922360M	1.19908160M	
41.50	.07325579	.17669637	.25219682	1.19742180	.99999994
	.07765083J	.02075596J	-.08456472J	-.01716030J	-.00000000
	.10675234M	.17791126M	.26599704M	1.19754470M	

41.75	.07586998	.18046269	.24892717	1.19585100	.99999991
	.07907133J	.02212856J	-.08604079J	-.01826780J	.00000000
	.10958343M	.18181434M	.26337759M	1.19599050M	
42.00	.07803719	.18419135	.24611080	1.19426200	.99999989
	.08056900J	.02345033J	-.08755482J	-.01926017J	.00000000
	.11216580M	.18567813M	.26122092M	1.19441720M	
44.00	.08659442	.21302392	.23208064	1.18083150	1.00000000
	.09393617J	.03327021J	-.09998979J	-.02458209J	.00000000
	.12775992M	.21560634M	.25270413M	1.18108720M	
46.00	.08794953	.24030952	.22422701	1.16610190	1.00000000
	.10828109J	.04305754J	-.11193113J	-.02691363J	.00000000
	.13949879M	.24413647M	.25061191M	1.16641240M	
48.00	.08616847	.26592367	.21833482	1.15014540	.99999985
	.12291885J	.05357400J	-.12293859J	-.02696904J	.00000000
	.15011345M	.27126660M	.25056733M	1.15046150M	
50.00	.08256287	.28959968	.21316114	1.13306650	.99999997
	.13758272J	.06520317J	-.13288456J	-.02491452J	-.00000000
	.16045445M	.29684916M	.25118912M	1.13334030M	
52.00	.07770522	.31103281	.20825635	1.11496520	.99999999
	.15208211J	.07822604J	-.14170582J	-.02079066J	-.00000001
	.17078369M	.32071906M	.25189530M	1.11515900M	
54.00	.07188772	.32989438	.20346182	1.09592040	1.00000000
	.16623999J	.09288055J	-.14936105J	-.01460739J	-.00000000
	.18111758M	.34272013M	.25239935M	1.09601770M	
56.00	.06527228	.34582687	.19874337	1.07597520	.99999997
	.17987738J	.10937825J	-.15581941J	-.00637309J	-.00000001
	.19135397M	.36271175M	.25254428M	1.07599400M	
58.00	.05795128	.35843090	.19412225	1.05512370	1.00000000
	.19280867J	.12790828J	-.16105486J	.00389668J	-.00000000
	.20132941M	.38056961M	.25223424M	1.05513080M	
60.00	.04997667	.36724606	.18964190	1.03329660	.99999985
	.20483854J	.14863618J	-.16504066J	.01617696J	.00000001
	.21084708M	.39618478M	.25140101M	1.03342310M	
62.00	.04137627	.37172518	.18534941	1.01034680	1.00000000
	.21575815J	.17169869J	-.16774340J	.03043330J	.00000000
	.21968972M	.40946312M	.24998450M	1.01080500M	
64.00	.03216443	.37120142	.18128345	.98602898	1.00000000
	.22534022J	.19719514J	-.16911620J	.04662113J	.00000000
	.22762417M	.42032893M	.24791929M	.98713052M	
66.00	.02235088	.36484406	.17746448	.95997664	1.00000000
	.23333041J	.22517070J	-.16909059J	.06468112J	.00000001
	.23439846M	.42873421M	.24512296M	.96215320M	

68.00	.01194940	.35160132	.17388445	.93166924	1.00000000
	.23943593J	.25558906J	-.16756751J	.08452872J	.00000000
	.23973392M	.43468293M	.24148431M	.93549594M	
70.00	.00098931	.33012436	.17049366	.90038780	1.00000000
	.24330970J	.28828463J	-.16440718J	.10603224J	.00000000
	.24331170M	.43828085M	.23684976M	.90660962M	
72.00	-.01046787	.29866598	.16718057	.86515429	1.00000000
	.24452794J	.32288041J	-.15941720J	.12897218J	-.00000004
	.24475189M	.43983305M	.23100473M	.87471467M	
74.00	-.02230162	.25494930	.16374128	.82464750	.99999980
	.24256118J	.35864898J	-.15234107J	.15296819J	-.00000001
	.24358425M	.44003207M	.22364929M	.83871494M	
76.00	-.03428592	.19600050	.15983014	.77709337	1.00000010
	.23673478J	.39426890J	-.14284794J	.17734693J	-.00000004
	.23920468M	.44030007M	.21436232M	.79707342M	
78.00	-.04600987	.11795674	.15488071	.72012560	1.00000000
	.22618218J	.42740856J	-.13053156J	.20090982J	-.00000001
	.23081439M	.44338681M	.20255004M	.74762666M	
80.00	-.05673570	.01589555	.14798024	.65064060	1.00000000
	.20979473J	.45399855J	-.11493479J	.22151550J	.00000000
	.21733101M	.45427672M	.18737170M	.68731528M	
82.00	-.06515140	-.11616071	.13767421	.56471826	.99999990
	.18619659J	.46698678J	-.09563865J	.23534604J	.00000002
	.19726600M	.48121716M	.16763334M	.61179609M	
84.00	-.06894627	-.28463196	.12168524	.45784626	.99999990
	.15382318J	.45426550J	-.07250614J	.23564353J	.00000008
	.16856796M	.53607134M	.14164899M	.51492821M	
86.00	-.06414080	-.49409650	.09658430	.32605714	1.00000000
	.11131000J	.39553260J	-.04626358J	.21070488J	-.00000001
	.12846773M	.63291183M	.10709270M	.38821360M	
88.00	-.04424680	-.74102278	.05767731	.16938571	1.00000000
	.05866397J	.25870738J	-.01973703J	.14134380J	.00000000
	.07347952M	.78488487M	.06096083M	.22061185M	
90.00	.00000010	-1.00000040	-.00000013	-.00000037	.99999990
	-.00000010J	-.00000059J	.00000002J	-.00000032J	-.00000011
	.00000014M	1.00000030M	.00000013M	.00000049M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	.800

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.28205132	.00000000	1.28205130	1.00000000
2.00	.02234793	-.28017383	.01612892	1.28180970	.99999991
4.00	.04444860	-.27455844	.03228823	1.28108280	.99999976
6.00	.06605507	-.26525723	.04850863	1.27986340	.99999986
8.00	.08692110	-.25235673	.06482146	1.27813900	.99999978
10.00	.10680133	-.23597848	.08125901	1.27589240	1.00000000
12.00	.12545151	-.21627953	.09785484	1.27309980	.99999977
14.00	.14262861	-.19345275	.11464418	1.26973210	.99999973
16.00	.15809097	-.16772799	.13166396	1.26575290	.99999984
18.00	.17159830	-.13937285	.14895303	1.26111790	.99999974
20.00	.18291213	-.10869485	.16655156	1.25577480	.99999982
22.00	.19179708	-.07604366	.18449919	1.24966190	.99999989
24.00	.19802533	-.04181542	.20282989	1.24270920	.99999977
26.00	.20138901	-.00645878	.22155775	1.23484230	.99999966
28.00	.20173868	.02951341	.24063710	1.22599730	.99999995
30.00	.19911170	.06549994	.25983267	1.21617500	.99999986
32.00	.19426844	.10073995	.27819193	1.20567940	.99999989
34.00	.19240830	.13390726	.29042617	1.19678140	.99999979
34.25	.19365124	.13773098	.29028032	1.19634530	.99999986
34.50	.19594207	.14139969	.28905798	1.19638150	.99999991
34.75	.20010870	.14482064	.28594852	1.19726020	.99999996

| 35.00 | .20839962 | .14773844 | .27874541 | 1.19998520 | .99999984 |
| 35.25 | .23739915 | .14820140 | .25109593 | 1.21194160 | .99999996 |

IMAGINARY

35.50	.22932490	.15328179	.26025055	1.20747660	.99999995
	-.05493353J	.00638411J	.05408727J	-.02448298J	.00000000
	.23581264M	.15341467M	.26581155M	1.20772470M	
35.75	.20791567	.15971955	.28233190	1.19702940	1.00000000
	-.07269515J	.00802711J	.07115857J	-.03251586J	.00000000
	.22025782M	.15992113M	.29116119M	1.19747090M	
36.00	.18781111	.16574759	.30286686	1.18710770	.99999997
	-.08216643J	.00859150J	.07996179J	-.03688398J	.00000000
	.20499838M	.16597010M	.31324466M	1.18768050M	
36.25	.16896744	.17138891	.32192302	1.17769840	.99999993
	-.08698916J	.00858038J	.08416310J	-.03918798J	.00000000
	.19004502M	.17160355M	.33274291M	1.17835010M	
36.50	.15133548	.17666658	.33957169	1.16878570	.99999984
	-.08868221J	.00821619J	.08530294J	-.04009219J	.00000000
	.17540513M	.17685752M	.35012215M	1.16947300M	
36.75	.13486334	.18160309	.35588552	1.16035220	1.00000000
	-.08809042J	.00762804J	.08424218J	-.03996495J	.00000000
	.16108395M	.18176322M	.36572016M	1.16104010M	
37.00	.11949637	.18622064	.37093838	1.15237850	.99999993
	-.08575726J	.00690129J	.08153569J	-.03904280J	.00000000
	.14708395M	.18634847M	.37979381M	1.15303960M	
38.00	.06797045	.20191081	.41997964	1.12468030	.99999992
	-.06534664J	.00361788J	.06070600J	-.03016478J	.00000000
	.09428767M	.20194321M	.42434432M	1.12508470M	
39.00	.02977287	.21401371	.45435749	1.10272200	.99999997
	-.03564939J	.00104272J	.03236246J	-.01668167J	-.00000000
	.04644677M	.21401624M	.45550856M	1.10284810M	
39.25	.02193253	.21659310	.46111021	1.09798420	1.00000000
	-.02755533J	.00062179J	.02487132J	-.01293774J	-.00000000
	.03521835M	.21659399M	.46178047M	1.09806030M	
39.50	.01468658	.21901905	.46723058	1.09351160	1.00000000
	-.01932062J	.00030564J	.01733891J	-.00910195J	-.00000000
	.02426896M	.21901926M	.46755217M	1.09354940M	
39.75	.00799411	.22130249	.47276559	1.08928780	.99999998
	-.01099128J	.00009905J	.00980753J	-.00519539J	.00000000
	.01359096M	.22130251M	.47286729M	1.08930010M	

40.00	.00181685	.22345329	.47775904	1.08529730	.99999997
	-.00260644J	.00000558J	.00231246J	-.00123615J	.00000000
	.00317718M	.22345329M	.47776462M	1.08529790M	
40.25	-.00388160	.22548067	.48225203	1.08152530	1.00000000
	.00580134J	.00002777J	-.00511768J	.00276058J	.00000000
	.00698014M	.22548067M	.48227918M	1.08152880M	
40.50	-.00913519	.22739281	.48628273	1.07795780	1.00000000
	.01420429J	.00016732J	-.01245910J	.00678169J	.00000000
	.01688827M	.22739286M	.48644229M	1.07797900M	
40.75	-.01397608	.22919738	.48988684	1.07458170	1.00000000
	.02257955J	.00042525J	-.01969286J	.01081625J	.00000000
	.02655498M	.22919777M	.49028248M	1.07463600M	
41.00	-.01843417	.23090115	.49309748	1.07138460	1.00000010
	.03090762J	.00080200J	-.02680338J	.01485481J	.00000000
	.03598749M	.23090254M	.49382541M	1.07148750M	
42.00	-.03297355	.23682331	.50259054	1.06016270	1.00000000
	.06346484J	.00349208J	-.05380487J	.03090805J	.00000000
	.07151952M	.23684905M	.50546237M	1.06061310M	
44.00	-.05065592	.24521252	.51021929	1.04338210	.99999997
	.12341313J	.01433536J	-.10004589J	.06170097J	-.00000000
	.13340473M	.24563119M	.51993547M	1.04520480M	
46.00	-.05947013	.24988159	.50929150	1.03146770	.99999998
	.17565131J	.03186394J	-.13626167J	.09013496J	.00000000
	.18544562M	.25190498M	.52720496M	1.03539840M	
48.00	-.06403403	.25102851	.50446818	1.02251320	.99999997
	.22081015J	.05544219J	-.16407064J	.11625963J	.00000000
	.22990754M	.25707809M	.53047837M	1.02910130M	
50.00	-.06689541	.24818708	.49831972	1.01570400	1.00000000
	.26010085J	.08474330J	-.18534643J	.14038051J	-.00000000
	.26856553M	.26225608M	.53167267M	1.02535900M	
52.00	-.06937792	.24023160	.49244640	1.01133370	1.00000000
	.29502099J	.12001815J	-.20202222J	.16276344J	.00000000
	.30306877M	.26854343M	.53227476M	1.02434740M	
54.00	-.07182361	.22446378	.48852136	1.01237040	.99999999
	.32826645J	.16330699J	-.21700848J	.18337645J	.00000002
	.33603197M	.27758451M	.53455196M	1.02884430M	
54.25	-.07207200	.22158996	.48834317	1.01341170	1.00000000
	.33265494J	.16965136J	-.21910645J	.18578521J	-.00000003
	.34037285M	.27907650M	.53524450M	1.03030060M	
54.50	-.07227641	.21838685	.48829714	1.01487280	1.00000000
	.33722953J	.17635522J	-.22138213J	.18813516J	.00000000
	.34488786M	.28070265M	.53613817M	1.03216350M	

54.75	-.07240922	.21475430	.48843223	1.01693040	.99999995
	.34209908J	.18354262J	-.22393838J	.19040783J	.00000000
	.34967823M	.28250186M	.53732153M	1.03460250M	
55.00	-.07241691	.21050822	.48883863	1.01991550	.99999989
	.34746799J	.19144585J	-.22696834J	.19256793J	-.00000005
	.35493407M	.28454388M	.53895995M	1.03793540M	
55.25	-.07216925	.20522014	.48972588	1.02460920	1.00000010
	.35382217J	.20061284J	-.23093147J	.19453091J	.00000003
	.36110736M	.28698574M	.54144323M	1.04291230M	
55.50	-.07107436	.19703499	.49199569	1.03443810	1.00000000
	.36331711J	.21344665J	-.23787029J	.19591963J	-.00000001
	.37020383M	.29048624M	.54648150M	1.05282790M	

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55.75	-.05815553	.20357025	.48206205	1.03983240	.99999990
	.36773089J	.23529294J	-.24831346J	.17802565J	-.00000006
	.37230104M	.31113279M	.54225767M	1.05496180M	
56.00	-.05339930	.20995438	.47483054	1.03438680	1.00000010
	.36630480J	.24404918J	-.24927125J	.17063599J	-.00000004
	.37017656M	.32193297M	.53628368M	1.04836660M	
58.00	-.04560687	.22714935	.44564068	.99506943	1.00000000
	.36347006J	.29269951J	-.24634320J	.15593871J	-.00000004
	.36632016M	.37049943M	.50919602M	1.00721390M	
60.00	-.05059459	.22626294	.42797919	.95606191	.99999990
	.36307829J	.33482744J	-.23881855J	.15898964J	-.00000005
	.36658648M	.40410929M	.49010253M	.96919145M	
62.00	-.06010974	.21440005	.41383681	.91576614	.99999990
	.36196511J	.37562824J	-.22882129J	.16823338J	-.00000008
	.36692222M	.43250890M	.47288485M	.93109080M	
64.00	-.07206532	.19241773	.40118390	.87357881	1.00000010
	.35899660J	.41559578J	-.21661804J	.18092615J	.00000003
	.36615839M	.45797863M	.45592969M	.89211782M	
66.00	-.08537175	.16015290	.38896577	.82899510	.99999990
	.35342890J	.45431416J	-.20227318J	.19563581J	-.00000007
	.36359361M	.48171600M	.43841624M	.85176654M	
68.00	-.09923052	.11708893	.37641547	.78149705	1.00000000
	.34466879J	.49086582J	-.18582425J	.21128466J	-.00000004
	.35866873M	.50463755M	.41978477M	.80955471M	
70.00	-.11290793	.06257321	.36284053	.73053161	1.00000000
	.33220601J	.52389332J	-.16733550J	.22685268J	-.00000004
	.35086896M	.52761691M	.39956779M	.76494350M	

72.00	-.12562730	-.00405241	.34753178	.67552111	1.00000000
	.31559717J	.55157069J	-.14693358J	.24123172J	-.00000001
	.33968189M	.55158557M	.37731659M	.71730154M	
74.00	-.13650229	-.08331980	.32971851	.61589783	.99999990
	.29447945J	.57154303J	-.12484842J	.25312559J	-.00000007
	.32457821M	.57758430M	.35256406M	.66588489M	
76.00	-.14448764	-.17546473	.30854975	.55116920	1.00000000
	.26860775J	.58085667J	-.10146612J	.26096413J	-.00000004
	.30500295M	.60678030M	.32480504M	.60982764M	
78.00	-.14834705	-.28019399	.28310024	.48101954	.99999980
	.23791933J	.57591223J	-.07739663J	.26283046J	-.00000003
	.28037912M	.64045575M	.29348932M	.54814199M	
80.00	-.14664234	-.39637085	.25240896	.40546486	.99999990
	.20262758J	.55247316J	-.05355632J	.25640915J	-.00000005
	.25012379M	.67995326M	.25802822M	.47973680M	
82.00	-.13776243	-.52162102	.21556253	.32506302	.99999993
	.16334538J	.50579302J	-.03125628J	.23898332J	-.00000001
	.21368247M	.72657764M	.21781680M	.40345878M	
84.00	-.12001526	-.65188388	.17184056	.24118092	.99999993
	.12123006J	.43093770J	-.01227880J	.20752090J	.00000002
	.17058836M	.78144730M	.17227868M	.31817158M	
86.00	-.09180985	-.78100601	.12093063	.15628176	.99999994
	.07812013J	.32338551J	.00109484J	.15890301J	-.00000002
	.12054793M	.84530975M	.12093558M	.22287699M	
88.00	-.05194654	-.90054070	.06320371	.07416070	1.00000000
	.03661239J	.17995496J	.00615640J	.09034260J	.00000004
	.06355242M	.91834488M	.06350283M	.11688282M	
90.00	.00000009	-1.00000010	-.00000013	-.00000019	.99999990
	-.00000005J	-.00000033J	-.00000001J	-.00000015J	-.00000008
	.00000010M	1.00000000M	.00000013M	.00000025M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	.800

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.21951222	.00000000	1.21951220	1.00000000
2.00	.01725399	-.21808713	.01047875	1.21936990	.99999981
4.00	.03432544	-.21382349	.02098988	1.21894210	.99999985
6.00	.05103171	-.20675715	.03156639	1.21822440	1.00000000
8.00	.06718987	-.19694751	.04224254	1.21720930	.99999995
10.00	.08261653	-.18447822	.05305455	1.21588670	1.00000000
12.00	.09712736	-.16945743	.06404143	1.21424250	.99999989
14.00	.11053657	-.15201824	.07524596	1.21225940	.99999985
16.00	.12265603	-.13231950	.08671575	1.20991550	.99999985
18.00	.13329397	-.11054693	.09850472	1.20718420	.99999982
20.00	.14225337	-.08691454	.11067455	1.20403340	.99999984
22.00	.14933019	-.06166729	.12329640	1.20042480	.99999977
24.00	.15431164	-.03508447	.13645146	1.19631330	.99999983
26.00	.15697767	-.00748545	.15022841	1.19164710	.99999986
28.00	.15711468	.02076074	.16470686	1.18637240	.99999993
30.00	.15458167	.04921679	.17988648	1.18045310	1.00000000
32.00	.14964295	.07733012	.19534439	1.17396880	.99999984
34.00	.14557929	.10420591	.20759328	1.16787770	.99999979
34.25	.14603268	.10737338	.20798150	1.16740560	.99999991
34.50	.14723787	.11045217	.20757115	1.16715370	.99999993
34.75	.14982985	.11339203	.20572005	1.16730570	.99999974

35.00	.15555772	.11605387	.20065714	1.16836720	1.00000000
35.25	.17754483	.11735657	.17905227	1.17411880	.99999996

IMAGINARY

35.50	.16944806	.12129266	.18813453	1.17124290	1.00000000
	-.04339423J	.00351258J	.04402573J	-.01251300J	-.00000000
	.17491627M	.12134350M	.19321714M	1.17130960M	
35.75	.15089488	.12592450	.20768500	1.16533340	.99999989
	-.05658737J	.00429726J	.05716690J	-.01636917J	-.00000000
	.16115643M	.12599780M	.21540917M	1.16544830M	
36.00	.13358690	.13026115	.22579904	1.15975850	1.00000000
	-.06290426J	.00445730J	.06327905J	-.01825292J	-.00000000
	.14765637M	.13033738M	.23449828M	1.15990210M	
36.25	.11747433	.13432044	.24254444	1.15450820	.99999998
	-.06533833J	.00429274J	.06544964J	-.01901655J	-.00000000
	.13442215M	.13438901M	.25121994M	1.15466470M	
36.50	.10250387	.13811994	.25799139	1.14957150	1.00000000
	-.06515201J	.00393942J	.06498770J	-.01901817J	-.00000000
	.12145709M	.13817610M	.26605066M	1.14972870M	
36.75	.08862107	.14167652	.27221023	1.14493650	.99999989
	-.06305324J	.00347753J	.06262965J	-.01845825J	.00000000
	.10876307M	.14171919M	.27932218M	1.14508520M	
37.00	.07577002	.14500664	.28527170	1.14059090	.99999993
	-.05949960J	.00296080J	.05885199J	-.01746640J	.00000000
	.09633950M	.14503686M	.29127907M	1.14072450M	
38.00	.03358491	.15636152	.32729944	1.12585170	1.00000010
	-.03608752J	.00098900J	.03510446J	-.01070258J	-.00000000
	.04929762M	.15636464M	.32917660M	1.12590250M	
38.25	.02507892	.15877599	.33557215	1.12276590	.99999995
	-.02878483J	.00062216J	.02788530J	-.00855663J	.00000000
	.03817747M	.15877720M	.33672876M	1.12279850M	
38.50	.01728948	.16104468	.34306981	1.11989640	1.00000000
	-.02112933J	.00033257J	.02038502J	-.00629489J	-.00000000
	.02730155M	.16104502M	.34367488M	1.11991400M	
38.75	.01017032	.16317790	.34984671	1.11723200	.99999987
	-.01319864J	.00012909J	.01268167J	-.00394047J	.00000000
	.01666252M	.16317794M	.35007647M	1.11723890M	
39.00	.00367793	.16518506	.35595382	1.11476270	1.00000000
	-.00505732J	.00001890J	.00483947J	-.00151289J	-.00000000
	.00625330M	.16518505M	.35598671M	1.11476360M	

39.25	-.00222928	.16707494	.36143935	1.11247850	.99999994
	.00324182J	.00000775J	-.00308962J	.00097161J	.00000000
	.00393435M	.16707494M	.36145254M	1.11247880M	
39.50	-.00759017	.16885543	.36634835	1.11037050	1.00000000
	.01165464J	.00010038J	-.01106275J	.00349916J	.00000000
	.01390832M	.16885545M	.36651533M	1.11037590M	
39.75	-.01244148	.17053369	.37072299	1.10843000	.99999993
	.02014501J	.00030062J	-.01904538J	.00605812J	.00000000
	.02367725M	.17053395M	.37121188M	1.10844650M	
40.00	-.01681741	.17211615	.37460261	1.10664960	.99999986
	.02868299J	.00061168J	-.02700940J	.00863849J	.00000000
	.03324965M	.17211723M	.37557505M	1.10668320M	
42.00	-.03810148	.18188789	.39170216	1.09747650	1.00000000
	.09663061J	.00736588J	-.08823116J	.02925701J	-.00000000
	.10387106M	.18203697M	.40151626M	1.09786630M	
44.00	-.04190350	.18722380	.39222805	1.09672940	1.00000000
	.16275505J	.02275147J	-.14454487J	.04850693J	-.00000000
	.16806281M	.18860111M	.41801441M	1.09780150M	
44.25	-.04138582	.18754406	.39147929	1.09735740	1.00000000
	.17114497J	.02544305J	-.15152898J	.05075544J	.00000000
	.17607778M	.18926204M	.41978215M	1.09853050M	
44.50	-.04062978	.18776354	.39056055	1.09821030	1.00000000
	.17966803J	.02835943J	-.15860811J	.05295889J	-.00000000
	.18420472M	.18989313M	.42153774M	1.09948640M	
44.75	-.03960974	.18786608	.38946311	1.09933180	1.00000020
	.18839001J	.03153447J	-.16584746J	.05511154J	.00000001
	.19250903M	.19049432M	.42330472M	1.10071230M	
45.00	-.03828282	.18782795	.38816850	1.10078610	.99999995
	.19740827J	.03501825J	-.17334271J	.05720526J	-.00000000
	.20108605M	.19106443M	.42511465M	1.10227140M	
45.25	-.03657520	.18761156	.38664059	1.10267650	1.00000010
	.20687523J	.03888927J	-.18124320J	.05922694J	.00000002
	.21008356M	.19159977M	.42701292M	1.10426590M	
45.50	-.03435053	.18715182	.38480859	1.10518200	.99999998
	.21705700J	.04328385J	-.18980904J	.06115375J	-.00000001
	.21975827M	.19209189M	.42907472M	1.10687260M	
45.75	-.03131699	.18631577	.38251364	1.10867200	.99999991
	.22850248J	.04848089J	-.19957651J	.06293865J	-.00000000
	.23063854M	.19252003M	.43144809M	1.11045700M	
46.00	-.02660709	.18472245	.37926826	1.11420760	1.00000010
	.24280529J	.05527981J	-.21210394J	.06444523J	-.00000000
	.24425876M	.19281659M	.43454860M	1.11606970M	

IMAGINARY

46.25	-.00334075	.18654134	.36032919	1.12607350	1.00000000
	.26112634J	.07058483J	-.23126004J	.05688755J	.00000000
	.26114770M	.19944896M	.42815689M	1.12750940M	
46.50	.01075901	.19581836	.34536150	1.12254630	.99999995
	.25388722J	.07568303J	-.22625036J	.04847392J	-.00000001
	.25411508M	.20993511M	.41287260M	1.12359240M	
46.75	.01816500	.20193906	.33698829	1.11954570	.99999992
	.25042298J	.07932939J	-.22353929J	.04425181J	-.00000001
	.25108093M	.21696206M	.40438956M	1.12041990M	
47.00	.02336266	.20703579	.33078841	1.11669930	.99999988
	.24822419J	.08253568J	-.22162262J	.04137727J	-.00000000
	.24932120M	.22288103M	.39816774M	1.11746550M	
48.00	.03521036	.22324430	.31471570	1.10578660	.99999988
	.24463658J	.09383594J	-.21729407J	.03525064J	-.00000000
	.24715749M	.24216358M	.38244304M	1.10634830M	
50.00	.04331570	.24759938	.29727963	1.08408760	.99999998
	.24657665J	.11487446J	-.21441576J	.03256176J	-.00000002
	.25035233M	.27294980M	.36653688M	1.08457640M	
52.00	.04354180	.26628371	.28660753	1.06161980	1.00000010
	.25278177J	.13645279J	-.21388214J	.03538603J	-.00000000
	.25650440M	.29920958M	.35761633M	1.06220930M	
54.00	.03992441	.28042720	.27874072	1.03812130	.99999994
	.26050373J	.15939555J	-.21375789J	.04160867J	-.00000001
	.26354534M	.32256216M	.35126744M	1.03895470M	
56.00	.03388406	.29006453	.27234835	1.01348210	.99999997
	.26858549J	.18400801J	-.21325755J	.05050161J	-.00000001
	.27071441M	.34350601M	.34590808M	1.01473950M	
58.00	.02609643	.29489522	.26683863	.98758983	.99999994
	.27633640J	.21042149J	-.21196013J	.06169074J	-.00000004
	.27756590M	.36227115M	.34077844M	.98951473M	
58.25	.02502101	.29513893	.26619471	.98425801	.99999984
	.27725563J	.21385203J	-.21172762J	.06323746J	-.00000004
	.27838235M	.36447176M	.34012968M	.98628738M	
58.50	.02392499	.29529918	.26555915	.98090382	.99999984
	.27816077J	.21731113J	-.21147805J	.06481554J	-.00000004
	.27918778M	.36664114M	.33947698M	.98304290M	
58.75	.02280889	.29537479	.26493149	.97752693	.99999997
	.27905096J	.22079872J	-.21121089J	.06642456J	-.00000005
	.27998157M	.36877952M	.33881961M	.97978115M	

60.00	.01694418	.29444316	.26189814	.96028650	.99999986
	.28324917J	.23865916J	-.20959934J	.07491914J	-.00000002
	.28375552M	.37901841M	.33544375M	.96320456M	
62.00	.00667833	.28809605	.25732620	.93134522	.99999995
	.28889576J	.26864413J	-.20598208J	.08996486J	-.00000008
	.28897293M	.39391496M	.32961400M	.93568028M	
64.00	-.00450815	.27510771	.25295939	.90045259	.99999990
	.29287854J	.30018521J	-.20094927J	.10660098J	.00000003
	.29291323M	.40717982M	.32306200M	.90674066M	
66.00	-.01643806	.25458457	.24862945	.86719190	.99999990
	.29480193J	.33294594J	-.19435474J	.12456585J	-.00000003
	.29525986M	.41912563M	.31557941M	.87609271M	
68.00	-.02891950	.22546510	.24413323	.83102528	1.00000000
	.29425328J	.36639685J	-.18605320J	.14353303J	.00000007
	.29567098M	.43021059M	.30694759M	.84332956M	
70.00	-.04171689	.18649770	.23920641	.79127460	1.00000000
	.29078814J	.39974349J	-.17589561J	.16307021J	.00000000
	.29376528M	.44110797M	.29691576M	.80790307M	
72.00	-.05451804	.13622297	.23349493	.74710316	1.00000000
	.28391853J	.43182254J	-.16373106J	.18258244J	-.00000003
	.28910542M	.45279951M	.28518019M	.76909002M	
74.00	-.06689246	.07297214	.22652155	.69750129	.99999990
	.27310629J	.46095405J	-.14941861J	.20122911J	-.00000000
	.28117903M	.46669430M	.27136310M	.72594848M	
76.00	-.07823416	-.00509731	.21764509	.64128727	1.00000000
	.25776454J	.48473118J	-.13285420J	.21780353J	.00000006
	.26937546M	.48475798M	.25498945M	.67726488M	
78.00	-.08768623	-.09989190	.20601243	.57713988	.99999970
	.23727809J	.49973693J	-.11402128J	.23056427J	-.00000009
	.25296198M	.50962279M	.23546119M	.62149040M	
80.00	-.09403993	-.21312949	.19050863	.50370269	1.00000000
	.21105697J	.50117262J	-.09308023J	.23700326J	.00000009
	.23105963M	.54460828M	.21203176M	.55667489M	
82.00	-.09561387	-.34584006	.16971899	.41981515	1.00000010
	.17865218J	.48242382J	-.07051557J	.23355374J	-.00000005
	.20262925M	.59358073M	.18378515M	.48040826M	
84.00	-.09013205	-.49745213	.14194187	.32497764	1.00000000
	.13997588J	.43465714J	-.04736510J	.21527209J	.00000004
	.16648433M	.66059476M	.14963604M	.38981090M	
86.00	-.07466311	-.66428939	.10532174	.22017003	.99999996
	.09567732J	.34670779J	-.02554001J	.17561891J	-.00000001
	.12136197M	.74932414M	.10837417M	.28163246M	

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88.00    -.04575563    -.83738812     .05822483     .10913285    1.00000000
          .04770746J    .20580251J   -.00819759J    .10662965J    .00000001
          .06610279M    .86230709M    .05879908M    .15257739M

90.00     .00000008   -1.00000020   -.00000012    -.00000026     .99999980
         -.00000007J   -.00000041J    .06000000J  -.00000020J   -.00000010
          .00000011M   1.00000010M    .00000012M    .00000033M
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AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	.800

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.16279064	.00000000	1.16279060	.99999983
1.00	.00632260	-.16254483	.00267240	1.16277510	1.00000010
2.00	.01263091	-.16180755	.00534748	1.16272780	.99999993
3.00	.01891065	-.16058021	.00802787	1.16264920	1.00000010
4.00	.02514748	-.15886477	.01071628	1.16253880	1.00000000
5.00	.03132714	-.15666466	.01341546	1.16239650	1.00000020
6.00	.03743528	-.15398360	.01612822	1.16222190	1.00000020
7.00	.04345755	-.15082628	.01885745	1.16201460	1.00000010
8.00	.04937958	-.14719855	.02160612	1.16177430	1.00000010
9.00	.05518699	-.14310691	.02437732	1.16150030	1.00000010
10.00	.06086531	-.13855887	.02717430	1.16119200	.99999999
11.00	.06640005	-.13356266	.03000044	1.16084900	1.00000000
12.00	.07177660	-.12812762	.03285932	1.16047020	1.00000000
13.00	.07698034	-.12226406	.03575475	1.16005510	1.00000020
14.00	.08199638	-.11598274	.03869076	1.15960240	1.00000010
15.00	.08680990	-.10929609	.04167167	1.15911140	1.00000010
16.00	.09140570	-.10221685	.04470213	1.15858090	1.00000010
17.00	.09576855	-.09475928	.04778715	1.15800960	.99999996
18.00	.09988278	-.08693818	.05093205	1.15739670	1.00000020
19.00	.10373252	-.07876979	.05414283	1.15674040	1.00000010

20.00	.10730165	-.07027145	.05742584	1.15603940	1.00000000
21.00	.11057339	-.06146140	.06078798	1.15529260	1.00000040
22.00	.11353061	-.05235919	.06423696	1.15449790	1.00000000
23.00	.11615596	-.04298624	.06778081	1.15365440	1.00000010
24.00	.11843114	-.03336468	.07142825	1.15276040	1.00000010
25.00	.12033794	-.02351890	.07518858	1.15181460	1.00000010
26.00	.12185811	-.01347515	.07907087	1.15081600	1.00000010
27.00	.12297406	-.00326174	.08308341	1.14976410	1.00000000
28.00	.12367094	.00709012	.08723174	1.14865950	1.00000000
29.00	.12394034	.01754570	.09151452	1.14750440	1.00000010
30.00	.12378889	.02806537	.09591445	1.14630430	1.00000010
31.00	.12325980	.03860231	.10037595	1.14507120	.99999979
32.00	.12248985	.04909811	.10474557	1.14383320	.99999997
33.00	.12189226	.05946949	.10858161	1.14265790	.99999999
34.00	.12295109	.06956208	.11032870	1.14175960	.99999993
35.00	.13595111	.07870632	.09927351	1.14250270	1.00000000
35.25	.16050600	.07965681	.07422662	1.14547120	.99999982

IMAGINARY

35.50	.15090730	.08285963	.08493242	1.14399820	.99999993
	-.04782377J	.00287706J	.04988551J	-.00620025J	-.00000000
	.15830390M	.08290957M	.09849914M	1.14401490M	
	-17.58PA	1.98PA	30.42PA	-.31PA	
35.75	.12996461	.08660033	.10736416	1.14107630	.99999984
	-.06124124J	.00341533J	.06370308J	-.00790857J	.00000000
	.14367076M	.08666765M	.12484047M	1.14110360M	
	-25.23PA	2.25PA	30.68PA	-.39PA	
36.00	.11075418	.09005071	.12786067	1.13841000	.99999999
	-.06664381J	.00341578J	.06913069J	-.00856641J	-.00000000
	.12925898M	.09011546M	.14535268M	1.13844210M	
	-31.03PA	2.17PA	28.39PA	-.43PA	
37.00	.04963492	.10130795	.19247836	1.13016870	.99999997
	-.05439498J	.00172979J	.05581620J	-.00680237J	.00000000
	.07363722M	.10132271M	.20040800M	1.13018910M	
	-47.61PA	.97PA	16.17PA	-.34PA	

38.00	.01005649	.10920160	.23372789	1.12558400	.99999971
	-.01743212J	.00016482J	.01770551J	-.00207385J	.00000000
	.02012490M	.10920172M	.23439755M	1.12558580M	
	-60.01PA	.08PA	4.33PA	-.10PA	
39.00	-.01117863	.11421207	.25575602	1.12493440	1.00000000
	.03330378J	.00059650J	-.03352328J	.00358102J	.00000000
	.03512981M	.11421362M	.25794369M	1.12494000M	
	-71.44PA	.29PA	-7.46PA	.18PA	
39.25	-.01346402	.11494610	.25823030	1.12563650	1.00000010
	.04872531J	.00128108J	-.04895631J	.00501170J	.00000000
	.05055131M	.11495323M	.26282999M	1.12564760M	
	-74.55PA	.63PA	-10.73PA	.25PA	
39.50	-.01403841	.11535260	.25905715	1.12695230	1.00000010
	.06638413J	.00238915J	-.06660030J	.00641010J	.00000000
	.06785227M	.11537733M	.26748122M	1.12697040M	
	-78.05PA	1.18PA	-14.41PA	.32PA	
39.75	-.01153077	.11512916	.25698642	1.12950560	1.00000000
	.08916097J	.00433432J	-.08939140J	.00771924J	-.00000000
	.08990349M	.11521071M	.27208977M	1.12953190M	
	-82.63PA	2.15PA	-19.17PA	.39PA	

IMAGINARY

40.00	.02028371	.11678603	.22553137	1.13420980	1.00000000
	.11148656J	.01038400J	-.11268898J	.00398788J	.00000000
	.11331672M	.11724676M	.25211744M	1.13421680M	
	79.68PA	5.08PA	-26.54PA	.20PA	
41.00	.05323957	.13134921	.19126132	1.12961260	.99999991
	.09942981J	.01615029J	-.10076628J	-.00279664J	-.00000000
	.11278625M	.13233838M	.21618218M	1.12961600M	
	61.83PA	7.00PA	-27.78PA	-.14PA	
42.00	.06318656	.14314841	.18043321	1.12509660	.99999989
	.09873681J	.01994930J	-.09950891J	-.00524504J	.00000000
	.11722414M	.14453179M	.20605379M	1.12510880M	
	57.38PA	7.93PA	-28.87PA	-.26PA	
43.00	.06817077	.15428607	.17445128	1.12039180	.99999998
	.10057178J	.02346630J	-.10055190J	-.00666391J	.00000000
	.12149871M	.15606043M	.20135524M	1.12041160M	
	55.86PA	8.64PA	-29.95PA	-.34PA	
44.00	.07089342	.16502095	.17052408	1.11546300	1.00000000
	.10356951J	.02694992J	-.10258192J	-.00750240J	-.00000000
	.12550904M	.16720709M	.19900128M	1.11548810M	
	55.60PA	9.27PA	-31.02PA	-.38PA	
45.00	.07232261	.17542099	.16765544	1.11030000	.99999992
	.10722518J	.03049711J	-.10511079J	-.00791032J	.00000000
	.12933599M	.17805223M	.19788032M	1.11032810M	
	56.00PA	9.86PA	-32.08PA	-.40PA	

46.00	.07291063	.18549955	.16538538	1.10490000	.99999997
	.11129435J	.03416070J	-.10790234J	-.00795111J	-.00000000
	.13305034M	.18861876M	.19747212M	1.10492850M	
	56.77PA	10.43PA	-33.12PA	-.41PA	
47.00	.07290234	.19524833	.16347007	1.09926260	1.00000000
	.11563860J	.03797595J	-.11082407J	-.00765412J	.00000000
	.13670054M	.19890722M	.19749541M	1.09928920M	
	57.77PA	11.00PA	-34.13PA	-.39PA	
48.00	.07244388	.20464875	.16176876	1.09338890	1.00000010
	.12017023J	.04196969J	-.11379365J	-.00703289J	.00000000
	.14031749M	.20890803M	.19778303M	1.09341140M	
	58.91PA	11.58PA	-35.12PA	-.36PA	
49.00	.07162879	.21367619	.16019560	1.08728010	.99999999
	.12482853J	.04616429J	-.11675585J	-.00609286J	-.00000000
	.14391958M	.21860616M	.19822855M	1.08729710M	
	60.15PA	12.19PA	-36.08PA	-.32PA	
50.00	.07052032	.22230265	.15869655	1.08093750	1.00000010
	.12956839J	.05057961J	-.11967160J	-.00483506J	-.00000000
	.14751638M	.22798413M	.19876087M	1.08094820M	
	61.44PA	12.81PA	-37.01PA	-.25PA	
51.00	.06916308	.23049722	.15723692	1.07436160	.99999999
	.13435379J	.05523377J	-.12251151J	-.00325820J	-.00000001
	.15111079M	.23702265M	.19933017M	1.07436650M	
	62.76PA	13.47PA	-37.92PA	-.17PA	
52.00	.06758965	.23822683	.15579459	1.06755240	1.00000020
	.13915450J	.06014378J	-.12525277J	-.00135981J	-.00000000
	.15470079M	.24570164M	.19990050M	1.06755320M	
	64.09PA	14.16PA	-38.79PA	-.07PA	
53.00	.06582439	.24545625	.15435552	1.06050810	.99999989
	.14394425J	.06532588J	-.12787707J	.00086331J	-.00000000
	.15828075M	.25400047M	.20044493M	1.06050840M	
	65.42PA	14.90PA	-39.64PA	.04PA	
54.00	.06388610	.25214798	.15291151	1.05322640	1.00000000
	.14869882J	.07079547J	-.13036898J	.00341432J	.00000001
	.16184181M	.26189807M	.20094278M	1.05323180M	
	66.74PA	15.68PA	-40.45PA	.18PA	
55.00	.06178934	.25826239	.15145815	1.04570220	.99999982
	.15339584J	.07656745J	-.13271553J	.00629639J	-.00000002
	.16537293M	.26937341M	.20137771M	1.04572110M	
	68.05PA	16.51PA	-41.22PA	.34PA	
56.00	.05954581	.26375714	.14999401	1.03792930	1.00000020
	.15801354J	.08265590J	-.13490507J	.00951217J	-.00000001
	.16886083M	.27640518M	.20173641M	1.03797280M	
	69.35PA	17.39PA	-41.96PA	.52PA	

57.00	.05716470	.26858696	.14851923	1.02989770	.99999990
	.16253115J	.08907438J	-.13692736J	.01306429J	-.00000001
	.17229096M	.28297208M	.20200758M	1.02998050M	
	70.62PA	18.34PA	-42.67PA	.72PA	
58.00	.05465356	.27270301	.14703552	1.02159600	.99999988
	.16692764J	.09583550J	-.13877269J	.01695450J	.00000001
	.17564694M	.28905254M	.20218136M	1.02173660M	
	71.87PA	19.36PA	-43.34PA	.95PA	
59.00	.05201850	.27605280	.14554537	1.01300860	.99999993
	.17118231J	.10295116J	-.14043198J	.02118421J	.00000003
	.17891145M	.29462533M	.20224884M	1.01323000M	
	73.09PA	20.45PA	-43.97PA	1.19PA	
60.00	.04926455	.27857897	.14405170	1.00411630	.99999972
	.17527401J	.11043209J	-.14189632J	.02575416J	.00000000
	.18206585M	.29966896M	.20220152M	1.00444640M	
	74.30PA	21.62PA	-44.56PA	1.46PA	
61.00	.04639592	.28021888	.14255765	.99489628	1.00000000
	.17918097J	.11828766J	-.14315670J	.03066431J	.00000000
	.18509025M	.30416211M	.20203100M	.99536873M	
	75.48PA	22.88PA	-45.12PA	1.76PA	
62.00	.04341605	.28090403	.14106627	.98531984	.99999997
	.18288125J	.12652614J	-.14420411J	.03591418J	-.00000000
	.18796410M	.30808430M	.20172882M	.98597414M	
	76.64PA	24.24PA	-45.63PA	2.08PA	
63.00	.04032803	.28055842	.13958033	.97535378	1.00000000
	.18635151J	.13515361J	-.14502882J	.04150203J	.00000002
	.19066524M	.31141535M	.20128593M	.97623634M	
	77.78PA	25.72PA	-46.09PA	2.43PA	
64.00	.03713452	.27909796	.13810201	.96495828	1.00000000
	.18956755J	.14417408J	-.14562060J	.04742528J	.00000004
	.19317046M	.31413665M	.20069261M	.96612298M	
	78.91PA	27.31PA	-46.51PA	2.81PA	
65.00	.03383805	.27642890	.13663272	.95408636	.99999993
	.19250378J	.15358877J	-.14596829J	.05368005J	-.00000000
	.19545515M	.31623162M	.19993809M	.95559526M	
	80.03PA	29.05PA	-46.89PA	3.22PA	
66.00	.03044113	.27244644	.13517297	.94268325	.99999999
	.19513290J	.16339561J	-.14605958J	.06026087J	-.00000000
	.19749306M	.31768723M	.19901038M	.94460736M	
	81.13PA	30.95PA	-47.21PA	3.65PA	
67.00	.02694639	.26703295	.13372186	.93068480	.99999994
	.19742566J	.17358824J	-.14588075J	.06716027J	-.00000002
	.19925611M	.31849563M	.19789575M	.93310487M	
	82.22PA	33.02PA	-47.49PA	4.12PA	

68.00	.02335691	.26005568	.13227697	.91801638	.99999999
	.19935036J	.18415488J	-.14541639J	.07436821J	.00000002
	.20071400M	.31865650M	.19657854M	.92102372M	
	83.31PA	35.30PA	-47.70PA	4.63PA	
69.00	.01967630	.25136482	.13083395	.90459105	1.00000010
	.20087257J	.19507716J	-.14464928J	.08187135J	-.00000004
	.20183395M	.31818134M	.19504085M	.90828843M	
	84.40PA	37.81PA	-47.87PA	5.17PA	
70.00	.01590906	.24079036	.12938590	.89030802	1.00000000
	.20195443J	.20632817J	-.14355971J	.08965213J	-.00000004
	.20258008M	.31709826M	.19326174M	.89481052M	
	85.49PA	40.59PA	-47.97PA	5.75PA	
71.00	.01206103	.22813874	.12792304	.87505034	.99999989
	.20255395J	.21786985J	-.14212539J	.09768716J	-.00000000
	.20291271M	.31545927M	.19121697M	.88048616M	
	86.59PA	43.68PA	-48.01PA	6.36PA	
72.00	.00813975	.21318988	.12643198	.85868245	1.00000000
	.20262462J	.22965053J	-.14032113J	.10594586J	-.00000001
	.20278804M	.31335170M	.18887844M	.86519366M	
	87.69PA	47.12PA	-47.98PA	7.03PA	
73.00	.00415505	.19569168	.12489478	.84104656	.99999990
	.20211432J	.24160079J	-.13811823J	.11438801J	-.00000000
	.20215702M	.31091184M	.18621318M	.84878968M	
	88.82PA	50.99PA	-47.87PA	7.74PA	
74.00	.00011997	.17535586	.12328795	.82196014	.99999990
	.20096426J	.25362807J	-.13548420J	.12296060J	-.00000000
	.20096429M	.30834538M	.18318266M	.83110635M	
	89.96PA	55.34PA	-47.69PA	8.50PA	
75.00	-.00394823	.15185134	.12158103	.80121096	1.00000000
	.19910780J	.26560989J	-.13238225J	.13159382J	-.00000004
	.19914694M	.30595333M	.17974150M	.81194576M	
	-88.86PA	60.24PA	-47.43PA	9.32PA	
76.00	-.00802675	.12479790	.11973493	.77855263	1.00000000
	.19646916J	.27738529J	-.12877091J	.14019574J	-.00000003
	.19663305M	.30416626M	.17583628M	.79107461M	
	-87.66PA	65.77PA	-47.08PA	10.20PA	
77.00	-.01208548	.09375901	.11769987	.75369883	1.00000010
	.19296205J	.28874372J	-.12460394J	.14864549J	-.00000005
	.19334014M	.30358472M	.17140420M	.76821703M	
	-86.41PA	72.01PA	-46.63PA	11.15PA	
78.00	-.01608420	.05823197	.11541234	.72631703	1.00000000
	.18848719J	.29940799J	-.11982960J	.15678281J	-.00000004
	.18917220M	.30501820M	.16637049M	.74304594M	
	-85.12PA	78.99PA	-46.07PA	12.18PA	

79.00	-.01996956	.01764048	.11279189	.69602181	1.00000010
	.18293091J	.30901519J	-.11439130J	.16439598J	-.00000000
	.18401766M	.30951829M	.16064675M	.71517297M	
	-83.76PA	86.73PA	-45.40PA	13.28PA	
80.00	-.02367052	-.02867683	.10973619	.66236599	1.00000000
	.17616235J	.31708878J	-.10822754J	.17120426J	.00000001
	.17774551M	.31838286M	.15412732M	.68413419M	
	-82.34PA	-84.83PA	-44.60PA	14.49PA	
81.00	-.02709202	-.08147312	.10611562	.62483458	1.00000010
	.16803141J	.32300133J	-.10127344J	.17683400J	-.00000004
	.17020144M	.33311819M	.14668617M	.64937547M	
	-80.84PA	-75.84PA	-43.66PA	15.80PA	
82.00	-.03010698	-.14160042	.10176564	.58283698	.99999980
	.15836646J	.32592648J	-.09346302J	.18078770J	.00000001
	.16120287M	.35535720M	.13817229M	.61023203M	
	-79.23PA	-66.51PA	-42.56PA	17.23PA	
83.00	-.03254470	-.21001011	.09647751	.53570333	1.00000010
	.14697270J	.32477237J	-.08473352J	.18240050J	-.00000009
	.15053283M	.38675745M	.12840436M	.56590458M	
	-77.51PA	-57.11PA	-41.29PA	18.80PA	
84.00	-.03417579	-.28774251	.08998653	.48268614	.99999980
	.13363182J	.31809441J	-.07503259J	.18078269J	-.00000002
	.13793276M	.42892866M	.11716426M	.51543019M	
	-75.65PA	-47.86PA	-39.82PA	20.53PA	
85.00	-.03469124	-.37589506	.08195765	.42297478	1.00000000
	.11810486J	.30397907J	-.06433063J	.17474198J	.00000005
	.12309443M	.48342566M	.10418967M	.45764879M	
	-73.63PA	-38.96PA	-38.12PA	22.44PA	
86.00	-.03367513	-.47555551	.07196868	.35573031	.99999999
	.10014017J	.27989346J	-.05264024J	.16268127J	.00000005
	.10565068M	.55180918M	.08916550M	.39116395M	
	-71.41PA	-30.47PA	-36.18PA	24.57PA	
87.00	-.03056858	-.58767138	.05949191	.28016047	1.00000000
	.07949141J	.24249445J	-.04004730J	.14246668J	-.00000004
	.08516644M	.63573673M	.07171522M	.31430342M	
	-68.96PA	-22.42PA	-33.94PA	26.95PA	
88.00	-.02462525	-.71281730	.04387745	.19565843	1.00000000
	.05595240J	.18740111J	-.02675911J	.11126548J	-.00000004
	.06113161M	.73703980M	.05139339M	.22508271M	
	-66.24PA	-14.72PA	-31.37PA	29.62PA	
89.00	-.01486005	-.85079782	.02434521	.10204891	1.00000000
	.02941978J	.10895057J	-.01317680J	.06536371J	.00000002
	.03295974M	.85774538M	.02768244M	.12118743M	
	-63.20PA	-7.29PA	-28.42PA	32.64PA	

90.00	.00000007	-1.00000050	-.00000011	-.00000039	.99999980
	-.00000013J	-.00000054J	.00000005J	-.00000033J	.00000009
	.00000015M	1.00000040M	.00000012M	.00000051M	
	-59.20PA	.00PA	-26.42PA	40.25PA	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	.900

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.22699386	.00000000	1.22699380	.99999990
2.00	.01808201	-.22539193	.01512698	1.22674460	.99999996
4.00	.03593932	-.22060128	.03028793	1.22599420	.99999995
6.00	.05334714	-.21266813	.04551739	1.22473480	.99999987
8.00	.07008049	-.20166934	.06085112	1.22295300	.99999991
10.00	.08591391	-.18771279	.07632682	1.22062950	.99999981
12.00	.10062102	-.17093815	.09198492	1.21773840	.99999982
14.00	.11397370	-.15151688	.10786967	1.21424650	.99999980
16.00	.12574103	-.12965343	.12403033	1.21011230	.99999988
18.00	.13568736	-.10558629	.14052302	1.20528400	.99999981
20.00	.14356968	-.07958954	.15741284	1.19969800	.99999987
22.00	.14913369	-.05197519	.17477695	1.19327550	.99999988
24.00	.15210846	-.02309678	.19270821	1.18591920	.99999989
25.00	.15253400	-.00830657	.20192091	1.18185420	.99999985
25.25	.15252326	-.00458155	.20425247	1.18079470	.99999986
25.50	.15246443	-.00084728	.20659589	1.17971750	.99999994
25.75	.15235676	.00289541	.20895139	1.17862210	.99999991
26.00	.15219969	.00664550	.21131940	1.17750820	.99999986
26.25	.15199263	.01040196	.21370010	1.17637560	1.00000000
26.50	.15173475	.01416403	.21609376	1.17522380	1.00000000
26.75	.15142547	.01793066	.21850071	1.17405260	.99999991

27.00	.15106416	.02170074	.22092121	1.17286160	.99999994
28.00	.14908430	.03679646	.23074441	1.16789270	.99999983
30.00	.14242364	.06683149	.25111805	1.15689630	.99999989
32.00	.13200643	.09612437	.27242769	1.14436900	1.00000000
34.00	.11919556	.12382055	.29311265	1.13078900	.99999985
34.25	.11792778	.12709477	.29516044	1.12922300	.99999987
34.50	.11706045	.13030075	.29677550	1.12782300	.99999999
34.75	.11699248	.13341201	.29757637	1.12675710	.99999993
35.00	.11884199	.13635581	.29649411	1.12649640	.99999980
35.25	.13116663	.13856080	.28532240	1.13063950	1.00000000

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35.50	.12331050	.14218102	.29356611	1.12633390	.99999990
	-.02825752J	.00183736J	.02705325J	-.01189749J	.00000000
	.12650678M	.14219288M	.29481000M	1.12639670M	
35.75	.10863512	.14610531	.30820100	1.11912290	.99999999
	-.03626982J	.00217037J	.03454607J	-.01533450J	.00000000
	.11452986M	.14612142M	.31013108M	1.11922790M	
36.00	.09485988	.14980311	.32181351	1.11224790	.99999987
	-.03955697J	.00215954J	.03748390J	-.01679340J	.00000000
	.10277719M	.14981867M	.32398916M	1.11237460M	
36.25	.08194960	.15328741	.33445126	1.10569900	.99999991
	-.04014099J	.00197826J	.03784245J	-.01711133J	.00000000
	.09125260M	.15330017M	.33658535M	1.10583130M	
36.50	.06986767	.15657081	.34616289	1.09946530	.99999989
	-.03888344J	.00170733J	.03646920J	-.01664292J	-.00000000
	.07995883M	.15658012M	.34807865M	1.09959110M	
36.75	.05857644	.15966543	.35699689	1.09353500	1.00000000
	-.03627157J	.00139544J	.03384538J	-.01558798J	.00000000
	.06889721M	.15967152M	.35859767M	1.09364600M	
37.00	.04803732	.16258323	.36700174	1.08789570	1.00000000
	-.03262287J	.00107564J	.03028501J	-.01407649J	.00000000
	.05806751M	.16258678M	.36824918M	1.08798670M	
37.25	.03821219	.16533531	.37622468	1.08253510	.99999996
	-.02816265J	.00077191J	.02601076J	-.01220069J	.00000000
	.04746901M	.16533711M	.37712273M	1.08260380M	

37.50	.02906314	.16793226	.38471196	1.07744040	1.00000000
	-.02305961J	.00050231J	.02118882J	-.01002981J	.00000000
	.03710003M	.16793301M	.38529501M	1.07748700M	
37.75	.02055296	.17038421	.39250837	1.07259900	1.00000000
	-.01744481J	.00028078J	.01594769J	-.00761776J	-.00000000
	.02695822M	.17038443M	.39283220M	1.07262600M	
38.00	.01264516	.17270050	.39965710	1.06799820	.99999995
	-.01142263J	.00011816J	.01038906J	-.00500771J	-.00000000
	.01704044M	.17270053M	.39979210M	1.06800990M	
38.25	.00530457	.17488998	.40619952	1.06362590	.99999990
	-.00507802J	.00002301J	.00459499J	-.00223497J	.00000000
	.00734335M	.17488997M	.40622550M	1.06362820M	
38.50	-.00150287	.17696090	.41217524	1.05947010	1.00000000
	.00151919J	.00000203J	-.00136768J	.00067125J	-.00000000
	.00213696M	.17696089M	.41217751M	1.05947020M	
38.75	-.00781005	.17892095	.41762195	1.05551870	.99999999
	.00831110J	.00006048J	-.00744414J	.00368655J	-.00000000
	.01140487M	.17892095M	.41768828M	1.05552500M	
39.00	-.01364819	.18077706	.42257526	1.05176070	.99999996
	.01524902J	.00020242J	-.01358890J	.00679024J	-.00000000
	.02046475M	.18077716M	.42279368M	1.05178260M	
40.00	-.03288714	.18728595	.43810326	1.03845030	.99999998
	.04373328J	.00165664J	-.03818743J	.01977491J	.00000000
	.05471896M	.18729327M	.43976442M	1.03863850M	
42.00	-.05660106	.19685462	.45405482	1.01822020	.99999990
	.09978562J	.00898503J	-.08368256J	.04649736J	-.00000000
	.11472075M	.19705956M	.46170179M	1.01928130M	
44.00	-.06814481	.20298042	.45786300	1.00360350	1.00000000
	.15066338J	.02202495J	-.12140601J	.07230451J	.00000000
	.16535770M	.20417186M	.47368548M	1.00620470M	
46.00	-.07327816	.20619218	.45543265	.99231387	.99999994
	.19534637J	.04033238J	-.15134232J	.09650484J	.00000000
	.20863818M	.21009977M	.47992019M	.99699548M	
48.00	-.07532828	.20640603	.45006144	.98305316	.99999996
	.23434269J	.06355371J	-.17468417J	.11910255J	-.00000000
	.24615207M	.21596880M	.48277308M	.99024185M	
50.00	-.07616292	.20311307	.44360928	.97526035	.99999999
	.26862779J	.09159801J	-.19286102J	.14029552J	.00000001
	.27921618M	.22281183M	.48371950M	.98529974M	
52.00	-.07672043	.19532520	.43721276	.96919818	.99999998
	.29950434J	.12490273J	-.20744712J	.16028047J	.00000002
	.30917450M	.23184612M	.48393109M	.98236191M	

54.00	-.07703271	.18083561	.43190697	.96725063	.99999997
	.32956390J	.16566279J	-.22104389J	.17909963J	-.00000000
	.33844702M	.24524615M	.48518453M	.98369225M	
54.25	-.07697366	.17827273	.43141403	.96772366	1.00000000
	.33361578J	.17165863J	-.22299683J	.18134978J	-.00000000
	.34238053M	.24748303M	.48563942M	.98456935M	
54.50	-.07685271	.17544232	.43099008	.96853061	1.00000000
	.33786932J	.17800742J	-.22512794J	.18356596J	-.00000006
	.34649965M	.24993329M	.48624585M	.98577279M	
54.75	-.07663522	.17226660	.43065862	.96981380	.99999990
	.34243491J	.18483315J	-.22753544J	.18573828J	-.00000004
	.35090542M	.25266395M	.48707208M	.98743987M	
55.00	-.07625464	.16860338	.43046226	.97183981	.99999990
	.34751972J	.19236755J	-.23040390J	.18784744J	-.00000005
	.35578747M	.25579752M	.48824554M	.98982790M	
55.25	-.07554995	.16412241	.43049773	.97523744	1.00000000
	.35361580J	.20115653J	-.23417196J	.18984687J	.00000000
	.36159634M	.25961532M	.49006611M	.99354410M	
55.50	-.07379354	.15739931	.43117118	.98276547	.99999990
	.36290196J	.21359062J	-.24078706J	.19152630J	.00000000
	.37032865M	.26532149M	.49384915M	1.00125430M	

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55.75	-.06018211	.16504096	.42052951	.98725282	1.00000000
	.36634933J	.23260083J	-.24817515J	.17762812J	.00000001
	.37125962M	.28520460M	.48829905M	1.00310500M	
56.00	-.05523159	.17110559	.41401303	.98276729	1.00000000
	.36426812J	.23972605J	-.24777434J	.17186091J	-.00000001
	.36843151M	.29452623M	.48249239M	.99768117M	
56.25	-.05220891	.17510807	.40923023	.97844850	.99999990
	.36286922J	.24574751J	-.24710360J	.16841443J	-.00000002
	.36660583M	.30175267M	.47804765M	.99283678M	
56.50	-.05011658	.17810072	.40528094	.97419681	.99999990
	.36179997J	.25127435J	-.24631607J	.16606616J	-.00000006
	.36525455M	.30799133M	.47426178M	.98824965M	
56.75	-.04860970	.18044129	.40185273	.96997721	.99999990
	.36093553J	.25651191J	-.24546001J	.16439870J	-.00000002
	.36419412M	.31361986M	.47088876M	.98381030M	
57.00	-.04751825	.18230323	.39879109	.96577219	1.00000000
	.36021285J	.26155887J	-.24455694J	.16320864J	-.00000008
	.36333356M	.31882206M	.46780596M	.97946566M	

57.25	-.04674317	.18378567	.39600586	.96157139	.99999990
	.35959424J	.26647125J	-.24361820J	.16237883J	-.00000007
	.36261955M	.32370370M	.46494135M	.97518532M	
57.50	-.04622026	.18495136	.39343838	.95736814	1.00000010
	.35905449J	.27128411J	-.24265002J	.16183411J	.00000000
	.36201718M	.32833225M	.46224754M	.97095006M	
57.75	-.04590506	.18584307	.39104781	.95315716	.99999990
	.35857589J	.27602152J	-.24165631J	.16152304J	-.00000008
	.36150233M	.33275444M	.45969137M	.96674622M	
58.00	-.04576510	.18649091	.38880462	.94893528	1.00000000
	.35814487J	.28069975J	-.24063944J	.16140832J	.00000001
	.36105704M	.33700327M	.45724869M	.96256470M	
60.00	-.04883238	.18474109	.37420835	.91449871	.99999990
	.35547253J	.31699969J	-.23176221J	.16516893J	-.00000008
	.35881098M	.36690335M	.44016543M	.92929471M	
62.00	-.05627548	.17290875	.36273815	.87841954	.99999990
	.35265143J	.35242912J	-.22155745J	.17386080J	-.00000013
	.35711335M	.39256045M	.42504902M	.89545991M	
64.00	-.06607718	.15187574	.35253269	.84022895	1.00000000
	.34848100J	.38725100J	-.20989684J	.18527415J	-.00000004
	.35469028M	.41596824M	.41028767M	.86041338M	
66.00	-.07721057	.12151748	.34264513	.79949808	.99999990
	.34220915J	.42103468J	-.19665812J	.19824014J	-.00000006
	.35081130M	.43821991M	.39506974M	.82370888M	
68.00	-.08894471	.08135367	.33240197	.75576916	1.00000000
	.33325101J	.45295047J	-.18175910J	.21185913J	-.00000007
	.34491651M	.46019837M	.37885015M	.78490210M	
70.00	-.10062585	.03075243	.32120466	.70854184	1.00000000
	.32110639J	.48180415J	-.16516759J	.22525895J	-.00000001
	.33650389M	.48278457M	.36118244M	.74348714M	
70.25	-.10204919	.02365972	.31970802	.70236605	.99999990
	.31934167J	.48512089J	-.16297539J	.22687202J	-.00000012
	.33525084M	.48569749M	.35885120M	.73809821M	
70.50	-.10345983	.01639197	.31818578	.69612613	1.00000000
	.31751934J	.48836197J	-.16075726J	.22846481J	.00000000
	.33394978M	.48863698M	.35648994M	.73265800M	
70.75	-.10485628	.00894812	.31663671	.68982118	1.00000000
	.31563869J	.49152347J	-.15851344J	.23003508J	-.00000003
	.33259978M	.49160490M	.35409789M	.72716531M	
71.00	-.10623717	.00132684	.31505956	.68345001	1.00000010
	.31369895J	.49460177J	-.15624408J	.23158081J	.00000001
	.33119987M	.49460354M	.35167418M	.72161872M	

71.25	-.10760096	-.00647311	.31345298	.67701156	1.00000010
	.31169931J	.49759279J	-.15394940J	.23309974J	-.00000005
	.32974902M	.49763488M	.34921795M	.71601685M	
71.50	-.10894627	-.01445297	.31181566	.67050464	1.00000000
	.30963909J	.50049271J	-.15162958J	.23458974J	-.00000004
	.32824632M	.50070133M	.34672832M	.71035822M	
71.75	-.11027149	-.02261409	.31014633	.66392815	1.00000000
	.30751749J	.50329721J	-.14928492J	.23604842J	-.00000005
	.32669067M	.50380499M	.34420448M	.70464135M	
72.00	-.11157490	-.03095709	.30844367	.65728152	1.00000010
	.30533385J	.50600168J	-.14691582J	.23747330J	-.00000004
	.32508108M	.50694776M	.34164564M	.69886519M	
74.00	-.12102428	-.10437807	.29345372	.60144587	.99999990
	.28555408J	.52348650J	-.12712603J	.24735522J	-.00000006
	.31014191M	.53379106M	.31980636M	.65032432M	
76.00	-.12806959	-.18991169	.27549065	.54053603	1.00000010
	.26147416J	.53166375J	-.10604892J	.25349877J	.00000009
	.29115383M	.56456424M	.29519734M	.59702664M	
78.00	-.13163336	-.28757006	.25372652	.47417895	1.00000000
	.23293551J	.52733435J	-.08411736J	.25416705J	-.00000005
	.26755614M	.60064802M	.26730670M	.53800237M	
80.00	-.13044196	-.39671637	.22726868	.40225628	1.00000000
	.19998768J	.50666074J	-.06201626J	.24723068J	-.00000004
	.23876804M	.64349746M	.23557815M	.47215792M	
82.00	-.12302918	-.51572337	.19521228	.32508569	.99999992
	.16299145J	.46521364J	-.04076416J	.23013839J	-.00000010
	.20421163M	.69454612M	.19942304M	.39830187M	
84.00	-.10778483	-.64155327	.15674311	.24366521	.99999995
	.12274982J	.39816314J	-.02179711J	.19995229J	.00000007
	.16335571M	.75506588M	.15825143M	.31520414M	
86.00	-.08307441	-.76931609	.11130271	.15996027	.99999996
	.08065091J	.30069619J	-.00702885J	.15349659J	-.00000002
	.11578397M	.82599360M	.11152442M	.22169458M	
88.00	-.04745548	-.89191743	.05882185	.07718854	1.00000000
	.03878885J	.16873871J	.00115148J	.08767585J	.00000003
	.06129109M	.90773864M	.05883312M	.11681235M	
90.00	.00000012	-1.00000010	-.00000011	-.00000010	.99999980
	-.00000008J	-.00000040J	-.00000001J	-.00000022J	.00000009
	.00000014M	1.00000000M	.00000011M	.00000024M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	.900

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.16279071	.00000000	1.16279070	1.00000000
2.00	.01288632	-.16165073	.00967152	1.16264270	.99999981
4.00	.02561357	-.15824033	.01937821	1.16219750	.99999978
6.00	.03802217	-.15258963	.02915609	1.16145030	1.00000000
8.00	.04995146	-.14474844	.03904298	1.16039260	.99999988
10.00	.06123897	-.13478697	.04907967	1.15901270	.99999987
12.00	.07171929	-.12279594	.05931104	1.15729480	.99999988
14.00	.08122274	-.10888722	.06978782	1.15521830	.99999982
16.00	.08957323	-.09319465	.08056890	1.15275730	.99999984
18.00	.09658498	-.07587495	.09172424	1.14987930	.99999982
20.00	.10205797	-.05710913	.10333937	1.14654380	.99999995
22.00	.10577055	-.03710500	.11552196	1.14269940	.99999985
24.00	.10746821	-.01610059	.12841203	1.13828100	.99999978
25.00	.10746847	-.00530706	.13517879	1.13583100	.99999986
25.25	.10737291	-.00258453	.13690871	1.13519130	.99999984
25.50	.10723763	.00014636	.13865489	1.13454040	.99999997
25.75	.10706180	.00288509	.14041788	1.13387800	1.00000000
26.00	.10684463	.00563099	.14219831	1.13320360	.99999985
26.25	.10658528	.00838335	.14399672	1.13251740	.99999998
26.50	.10628289	.01114152	.14581375	1.13181880	.99999998
26.75	.10593649	.01390485	.14765004	1.13110770	.99999993

27.00	.10554519	.01667256	.14950631	1.13038370	.99999991
28.00	.10351023	.02777319	.15714599	1.12735320	.99999991
30.00	.09693763	.04995162	.17364365	1.12057100	.99999997
32.00	.08637981	.07170711	.19226999	1.11262940	.99999998
34.00	.07107763	.09242619	.21355981	1.10328420	.99999983
34.25	.06892143	.09489880	.21630508	1.10203910	.99999980
34.50	.06683036	.09733483	.21894942	1.10080880	.99999986
34.75	.06498174	.09972682	.22131779	1.09964120	.99999985
35.00	.06391730	.10205595	.22287747	1.09868310	1.00000010
35.25	.06816605	.10417615	.21917319	1.09915960	.99999997

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35.50	.06048970	.10667180	.22719071	1.09641670	1.00000000
	-.01484452J	.00044537J	.01457848J	-.00402330J	-.00000000
	.06228453M	.10667272M	.22765796M	1.09642400M	
35.75	.04931106	.10917226	.23856255	1.09270730	.99999987
	-.01768801J	.00045410J	.01730913J	-.00481325J	.00000000
	.05238747M	.10917320M	.23918966M	1.09271780M	
36.00	.03891471	.11153805	.24907492	1.08919130	1.00000000
	-.01749523J	.00037217J	.01705957J	-.00477960J	-.00000000
	.04266659M	.11153867M	.24965845M	1.08920170M	
36.25	.02926565	.11377743	.25877083	1.08586230	1.00000000
	-.01551219J	.00026064J	.01507217J	-.00425426J	-.00000000
	.03312259M	.11377772M	.25920939M	1.08587050M	
36.50	.02032836	.11589834	.26769325	1.08271340	.99999994
	-.01229080J	.00015069J	.01189981J	-.00338360J	.00000000
	.02375513M	.11589843M	.26795761M	1.08271860M	
36.75	.01206757	.11790828	.27588428	1.07973820	1.00000000
	-.00815233J	.00006234J	.00786505J	-.00225265J	.00000000
	.01456320M	.11790829M	.27599636M	1.07974050M	
37.00	.00444806	.11981450	.28338560	1.07692940	1.00000000
	-.00331040J	.00000980J	.00318246J	-.00091806J	-.00000000
	.00554473M	.11981449M	.28340346M	1.07692970M	
37.25	-.00256445	.12162373	.29023733	1.07428020	.99999991
	.00208116J	.00000373J	-.00199367J	.00057922J	-.00000000
	.00330267M	.12162373M	.29024417M	1.07428030M	

37.50	-.00900338	.12334228	.29647822	1.07178390	.99999997
	.00790610J	.00005239J	-.00754710J	.00220805J	-.00000000
	.01198196M	.12334228M	.29657426M	1.07178610M	
37.75	-.01490125	.12497613	.30214586	1.06943370	.99999986
	.01407370J	.00016231J	-.01338750J	.00394391J	-.00000000
	.02049674M	.12497623M	.30244230M	1.06944090M	
38.00	-.02028929	.12653075	.30727584	1.06722330	.99999998
	.02051150J	.00033873J	-.01944312J	.00576701J	.00000000
	.02885094M	.12653120M	.30789036M	1.06723880M	
40.00	-.04834010	.13664721	.33269155	1.05388500	1.00000000
	.07647228J	.00452857J	-.07051414J	.02199680J	.00000000
	.09046974M	.13672222M	.34008221M	1.05411450M	
42.00	-.05731707	.14369009	.33892818	1.04678810	.99999996
	.13306574J	.01433124J	-.11948940J	.03881000J	-.00000000
	.14488525M	.14440299M	.35937448M	1.04750720M	
44.00	-.05365574	.14820581	.33345686	1.04543670	1.00000010
	.18866331J	.03098987J	-.16533804J	.05479992J	-.00000000
	.19614480M	.15141114M	.37219637M	1.04687190M	
46.00	-.03161955	.14843206	.31399837	1.05784650	1.00000000
	.25839987J	.06279218J	-.22274531J	.06885272J	-.00000002
	.26032727M	.16116740M	.38498109M	1.06008480M	

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46.25	-.00727793	.15236006	.29355458	1.06710330	1.00000010
	.27325765J	.07593166J	-.23737879J	.06345091J	.00000000
	.27335455M	.17023279M	.37752215M	1.06898800M	
46.50	.00561675	.16068143	.28065289	1.06445080	.99999999
	.26420184J	.07889592J	-.23000622J	.05703539J	.00000001
	.26426153M	.17900583M	.36286209M	1.06597770M	
46.75	.01240524	.16600856	.27354595	1.06211020	1.00000000
	.25950189J	.08123449J	-.22584000J	.05388201J	-.00000001
	.25979823M	.18481851M	.35472678M	1.06347600M	
47.00	.01719012	.17036647	.26833830	1.05985760	.99999990
	.25626282J	.08339651J	-.22276862J	.05177764J	-.00000000
	.25683872M	.18968318M	.34875679M	1.06112150M	
47.25	.02086709	.17418853	.26417683	1.05764450	.99999998
	.25384510J	.08547647J	-.22031950J	.05024790J	-.00000001
	.25470133M	.19403059M	.34399139M	1.05883740M	
47.50	.02381609	.17765530	.26069877	1.05545040	1.00000000
	.25197420J	.08751319J	-.21828761J	.04909459J	.00000000
	.25309722M	.19804031M	.34001960M	1.05659150M	

47.75	.02624091	.18086198	.25770917	1.05326440	1.00000000
	.25050113J	.08952689J	-.21656057J	.04821285J	-.00000001
	.25187179M	.20180713M	.33661920M	1.05436720M	
48.00	.02826598	.18386570	.25508881	1.05107990	.99999999
	.24933382J	.09152964J	-.21506832J	.04753950J	.00000000
	.25093090M	.20538809M	.33365353M	1.05215440M	
48.25	.02997382	.18670352	.25275851	1.04889260	1.00000000
	.24841039J	.09352918J	-.21376332J	.04703311J	.00000000
	.25021221M	.20882028M	.33103114M	1.04994650M	
48.50	.03142250	.18940124	.25066251	1.04669930	.99999989
	.24768685J	.09553097J	-.21261157J	.04666491J	-.00000002
	.24967208M	.21212966M	.32868734M	1.04773890M	
48.75	.03265461	.19197710	.24875988	1.04449790	.99999994
	.24713038J	.09753883J	-.21158752J	.04641398J	-.00000003
	.24927845M	.21533469M	.32657426M	1.04552860M	
49.00	.03370252	.19444489	.24701959	1.04228680	.99999997
	.24671574J	.09955565J	-.21067143J	.04626461J	-.00000000
	.24900706M	.21844940M	.32465538M	1.04331300M	
49.25	.03459132	.19681497	.24541737	1.04006440	.99999989
	.24642328J	.10158379J	-.20984773J	.04620480J	-.00000002
	.24883928M	.22148453M	.32290207M	1.04109010M	
49.50	.03534120	.19909524	.24393395	1.03783000	.99999989
	.24623663J	.10362482J	-.20910353J	.04622485J	-.00000001
	.24875988M	.22444825M	.32129122M	1.03885880M	
49.75	.03596844	.20129214	.24255376	1.03558250	.99999988
	.24614264J	.10568026J	-.20842837J	.04631708J	-.00000000
	.24875676M	.22734740M	.31980417M	1.03661770M	
50.00	.03648634	.20341066	.24126390	1.03332130	.99999985
	.24613046J	.10775131J	-.20781355J	.04647534J	-.00000003
	.24882012M	.23018740M	.31842540M	1.03436580M	
52.00	.03774193	.21788731	.23319908	1.01468080	.99999993
	.24808102J	.12497186J	-.20434963J	.04963500J	-.00000000
	.25093554M	.25118289M	.31006544M	1.01589400M	
54.00	.03563062	.22841175	.22747606	.99494874	.99999994
	.25206972J	.14350936J	-.20218936J	.05536666J	-.00000003
	.25457549M	.26975333M	.30434502M	.99648806M	
56.00	.03141185	.23505387	.22294015	.97400415	1.00000000
	.25682539J	.16347492J	-.20033773J	.06311069J	-.00000001
	.25873922M	.28631166M	.29972907M	.97604663M	
58.00	.02568449	.23756422	.21907233	.95171734	.99999993
	.26162326J	.18490278J	-.19826368J	.07258811J	-.00000002
	.26288100M	.30104118M	.29546771M	.95448149M	

60.00	.01878842	.23552887	.21559565	.92792046	.99999984
	.26595744J	.20776769J	-.19563227J	.08361217J	-.00000004
	.26662026M	.31407206M	.29112449M	.93167986M	
62.00	.01094622	.22841009	.21233471	.90238876	.99999990
	.26942062J	.23197953J	-.19220339J	.09602117J	-.00000006
	.26964289M	.32555440M	.28640560M	.90748307M	
64.00	.00232657	.21555094	.20915171	.87482518	1.00000000
	.27164832J	.25736679J	-.18778449J	.10964502J	-.00000003
	.27165828M	.33570801M	.28108264M	.88166951M	
66.00	-.00692051	.19616405	.20591113	.84484439	.99999990
	.27228770J	.28364987J	-.18220551J	.12428036J	-.00000001
	.27237563M	.34487328M	.27495134M	.85393655M	
68.00	-.01663956	.16931282	.20245504	.81195499	1.00000000
	.27097740J	.31040331J	-.17530405J	.13966535J	-.00000001
	.27148779M	.35357748M	.26780506M	.82387943M	
70.00	-.02664751	.13388731	.19858124	.77553953	1.00000000
	.26733178J	.33699928J	-.16691742J	.15544656J	.00000001
	.26865660M	.36262145M	.25941459M	.79096472M	
72.00	-.03670968	.08857987	.19402047	.73483305	1.00000010
	.26092781J	.36252773J	-.15687978J	.17113278J	.00000007
	.26349748M	.37319264M	.24950993M	.75449720M	
74.00	-.04650941	.03186603	.18840908	.68890167	.99999980
	.25129454J	.38568195J	-.14502586J	.18602853J	-.00000003
	.25556226M	.38699613M	.23776139M	.71357698M	
74.25	-.04769563	.02389025	.18761097	.68273936	.99999990
	.24983770J	.38832364J	-.14340859J	.18778927J	-.00000004
	.25434965M	.38905782M	.23614381M	.70809451M	
74.50	-.04887009	.01570560	.18678784	.67647577	1.00000000
	.24832118J	.39089570J	-.14176022J	.18952032J	-.00000004
	.25308436M	.39121108M	.23449020M	.70252218M	
74.75	-.05003176	.00730822	.18593853	.67010828	.99999990
	.24674384J	.39339363J	-.14008050J	.19121925J	.00000001
	.25176516M	.39346151M	.23279966M	.69685716M	
75.00	-.05117940	-.00130524	.18506182	.66363486	1.00000000
	.24510462J	.39581238J	-.13836923J	.19288333J	-.00000003
	.25039090M	.39581452M	.23107124M	.69109709M	
75.25	-.05231187	-.01013870	.18415649	.65705278	1.00000010
	.24340231J	.39814700J	-.13662617J	.19450987J	.00000007
	.24896027M	.39827606M	.22930399M	.68523897M	
75.50	-.05342802	-.01919607	.18322118	.65035935	.99999990
	.24163584J	.40039242J	-.13485105J	.19609614J	.00000002
	.24747208M	.40085230M	.22749682M	.67927974M	

75.75	-.05452653	-.02848114	.18225459	.64355206	1.00000000
	.23980402J	.40254303J	-.13304372J	.19763910J	.00000008
	.24592500M	.40354932M	.22564876M	.67321650M	
76.00	-.05560607	-.03799794	.18125522	.63662813	1.00000000
	.23790563J	.40459312J	-.13120391J	.19913568J	.00000008
	.24431767M	.40637351M	.22375862M	.66704601M	
78.00	-.06337844	-.12293811	.17189596	.57671221	.99999980
	.22018151J	.41660058J	-.11530370J	.20901341J	.00000000
	.22912163M	.43436138M	.20698590M	.61341957M	
80.00	-.06894438	-.22494399	.15944632	.50771433	1.00000000
	.19750807J	.41793161J	-.09730978J	.21357657J	.00000007
	.20919552M	.47462260M	.18679486M	.55080739M	
82.00	-.07105457	-.34579747	.14274326	.42817762	1.00000000
	.16929011J	.40328257J	-.07739472J	.20982106J	.00000007
	.18359709M	.53123697M	.16237481M	.47682380M	
84.00	-.06795894	-.48651704	.12030178	.33691296	.99999998
	.13507008J	.36531398J	-.05607663J	.19347096J	.00000012
	.15120299M	.60840211M	.13272944M	.38851171M	
86.00	-.05726595	-.64633522	.09031921	.23356135	.99999998
	.09475820J	.29415971J	-.03446667J	.15858984J	-.00000001
	.11071813M	.71012615M	.09667218M	.28231479M	
88.00	-.03585632	-.82096337	.05080857	.11960893	1.00000000
	.04903842J	.17723732J	-.01462640J	.09730341J	.00000003
	.06074901M	.83987731M	.05287195M	.15418900M	
90.00	.00000007	-1.00000030	-.00000011	-.00000025	.99999990
	-.00000008J	-.00000038J	.00000001J	-.00000021J	-.00000006
	.00000011M	1.00000026M	.00000011M	.00000033M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	.900

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.10497241	.00000000	1.10497240	1.00000000
2.00	.00820674	-.10427949	.00475436	1.10490650	.99999982
4.00	.01632281	-.10220567	.00953221	1.10470850	.99999980
6.00	.02425705	-.09876653	.01435774	1.10437630	.99999992
8.00	.03191734	-.09398783	.01925663	1.10390640	.99999977
10.00	.03920989	-.08790574	.02425700	1.10329400	.99999979
12.00	.04603840	-.08056710	.02939044	1.10253250	.99999964
14.00	.05230266	-.07202952	.03469353	1.10161380	.99999991
16.00	.05789682	-.06236188	.04020996	1.10052710	.99999979
18.00	.06270643	-.05164463	.04599336	1.09925970	.99999990
20.00	.06660412	-.03997075	.05211166	1.09779560	.99999985
22.00	.06944248	-.02744672	.05865424	1.09611510	.99999988
24.00	.07104259	-.01419519	.06574309	1.09419360	.99999980
25.00	.07130882	-.00733980	.06954411	1.09313290	.99999982
25.25	.07131407	-.00560524	.07052558	1.09285660	.99999991
25.50	.07129360	-.00386308	.07152053	1.09257560	.99999988
25.75	.07124677	-.00211367	.07252948	1.09228990	.99999987
26.00	.07117281	-.00035722	.07355307	1.09199940	.99999985
26.25	.07107106	.00140582	.07459186	1.09170410	1.00000000
26.50	.07094070	.00317516	.07564651	1.09140370	.99999997
26.75	.07078094	.00495038	.07671776	1.09109820	.99999998

27.00	.07059098	.00673112	.07780627	1.09078750	.99999995
28.00	.06950965	.01390154	.08234999	1.08949040	.99999978
30.00	.06555583	.02838025	.09256970	1.08660730	1.00000000
32.00	.05845018	.04282038	.10500169	1.08325670	.99999992
34.00	.04654937	.05684407	.12118831	1.07928140	.99999978
34.25	.04462473	.05853849	.12356734	1.07873360	.99999987
34.50	.04262952	.06021337	.12599683	1.07817910	1.00000010
34.75	.04064859	.06186515	.12839053	1.07762880	.99999985
35.00	.03899690	.06348633	.13043050	1.07712290	1.00000000
35.25	.04077742	.06502635	.12898936	1.07704720	.99999985

IMAGINARY

35.50	.03302958	.06669494	.13713360	1.07579360	1.00000000
	-.01004511J	.00013683J	.01010977J	-.00124708J	.00000000
	.03452328M	.06669508M	.13750574M	1.07579430M	
35.75	.02304610	.06831906	.14747808	1.07426930	.99999998
	-.01040195J	.00010578J	.01044665J	-.00129059J	-.00000000
	.02528484M	.06831914M	.14784761M	1.07427000M	
36.00	.01399160	.06985061	.15683761	1.07286980	1.00000010
	-.00804897J	.00005326J	.00806645J	-.00099753J	-.00000000
	.01614158M	.06985063M	.15704490M	1.07287020M	
36.25	.00582903	.07129564	.16525584	1.07159280	.99999990
	-.00402743J	.00001192J	.00402767J	-.00049829J	.00000000
	.00708504M	.07129564M	.16530491M	1.07159280M	
36.50	-.00147718	.07265988	.17277461	1.07043670	.99999984
	.00118839J	.00000095J	-.00118597J	.00014669J	-.00000000
	.00189587M	.07265988M	.17277867M	1.07043660M	
36.75	-.00796006	.07394863	.17943289	1.06940010	.99999984
	.00732119J	.00003438J	-.00729112J	.00090100J	-.00000000
	.01081492M	.07394864M	.17958096M	1.06940040M	
37.00	-.01364922	.07516674	.18526614	1.06848230	.99999990
	.01419001J	.00012366J	-.01410256J	.00173968J	-.00000000
	.01968903M	.07516684M	.18580211M	1.06848360M	
38.00	-.02887914	.07941395	.20086964	1.06602390	.99999996
	.04709663J	.00124206J	-.04643173J	.00562379J	-.00000000
	.05524579M	.07942366M	.20616623M	1.06603870M	

38.25	-.03083452	.08033449	.20289621	1.06573510	.99999998
	.05647812J	.00176744J	-.05557341J	.00667310J	-.00000000
	.06434707M	.08035393M	.21036937M	1.06575590M	
38.50	-.03201103	.08120194	.20414804	1.06559720	.99999999
	.06634408J	.00242108J	-.06515850J	.00773755J	.00000000
	.07366303M	.08123802M	.21429431M	1.06562520M	
38.75	-.03234174	.08201583	.20456683	1.06563200	1.00000000
	.07677647J	.00322730J	-.07526712J	.00881032J	.00000000
	.08331035M	.08207930M	.21797414M	1.06566840M	
39.00	-.03169867	.08277342	.20403623	1.06587560	.99999991
	.08793476J	.00422316J	-.08605601J	.00988436J	-.00000000
	.09347367M	.08288109M	.22144168M	1.06592140M	
39.25	-.02982835	.08346775	.20232102	1.06639400	1.00000000
	.10013251J	.00547249J	-.09783416J	.01095118J	-.00000000
	.10448085M	.08364695M	.22473388M	1.06645020M	
39.50	-.02615324	.08408115	.19887849	1.06732820	1.00000010
	.11407245J	.00710763J	-.11129516J	.01199745J	.00000000
	.11703211M	.08438103M	.22790188M	1.06739560M	
39.75	-.01876460	.08455571	.19190101	1.06912210	.99999999
	.13204070J	.00953822J	-.12869874J	.01298827J	-.00000000
	.13336737M	.08509199M	.23106138M	1.06920090M	

IMAGINARY

40.00	.01451523	.08791937	.15959651	1.07244950	.99999984
	.14307211J	.01405417J	-.13975047J	.01040975J	-.00000000
	.14380654M	.08903558M	.21213495M	1.07249990M	
40.25	.02620055	.09161009	.14803350	1.07153510	.99999999
	.13262042J	.01469408J	-.12948105J	.00834479J	-.00000000
	.13518374M	.09278106M	.19667043M	1.07156750M	
40.50	.03248125	.09442039	.14183761	1.07067980	.99999993
	.12696492J	.01523980J	-.12382105J	.00724235J	-.00000000
	.13105389M	.09564236M	.18828053M	1.07070420M	
40.75	.03679942	.09691697	.13758670	1.06983820	.99999998
	.12311615J	.01576118J	-.11990394J	.00648531J	-.00000000
	.12849818M	.09819019M	.18250220M	1.06985780M	
41.00	.04004582	.09924281	.13439367	1.06899890	1.00000000
	.12028401J	.01627426J	-.11696938J	.00591736J	.00000000
	.12677504M	.10056832M	.17816704M	1.06901520M	
41.25	.04260778	.10145886	.13187224	1.06815660	.99999999
	.11811859J	.01678542J	-.11467956J	.00547168J	.00000000
	.12556840M	.10283797M	.17476180M	1.06817050M	

41.50	.04469297	.10359720	.12981511	1.06730890	1.00000000
	.11642839J	.01729779J	-.11284916J	.00511285J	-.00000000
	.12471179M	.10503139M	.17200841M	1.06732110M	
41.75	.04642676	.10567690	.12809706	1.06645410	.99999991
	.11509561J	.01781317J	-.11136393J	.00481971J	-.00000000
	.12410657M	.10716770M	.16973739M	1.06646490M	
42.00	.04789090	.10770995	.12663645	1.06559120	1.00000000
	.11404192J	.01833260J	-.11014777J	.00457853J	-.00000000
	.12368952M	.10925894M	.16783718M	1.06560100M	
44.00	.05434671	.12292128	.11976925	1.05833670	1.00000000
	.11124267J	.02269339J	-.10579817J	.00378740J	-.00000000
	.12380830M	.12499852M	.15980590M	1.05834340M	
46.00	.05652079	.13686831	.11641468	1.05038110	1.00000000
	.11314118J	.02750033J	-.10581482J	.00421002J	-.00000000
	.12647342M	.13960373M	.15731863M	1.05038950M	
48.00	.05683056	.14969769	.11418704	1.04167010	.99999984
	.11699692J	.03282552J	-.10751156J	.00549245J	-.00000000
	.13006917M	.15325440M	.15683563M	1.04168450M	
50.00	.05604472	.16130284	.11235971	1.03216270	.99999996
	.12183052J	.03872999J	-.10993700J	.00755476J	-.00000000
	.13410326M	.16588736M	.15719684M	1.03219020M	
52.00	.05449878	.17149817	.11064421	1.02181130	1.00000000
	.12715934J	.04527245J	-.11263642J	.01038716J	-.00000000
	.13834599M	.17737309M	.15788953M	1.02186400M	
54.00	.05236862	.18005348	.10891385	1.01055430	.99999994
	.13269007J	.05250980J	-.11534914J	.01400245J	-.00000000
	.14265036M	.18755408M	.15864315M	1.01065120M	
56.00	.04975877	.18669903	.10711362	.99830850	1.00000000
	.13821306J	.06049606J	-.11790402J	.01841966J	.00000000
	.14689719M	.19625570M	.15929433M	.99847841M	
58.00	.04673721	.19112158	.10522357	.98496018	1.00000000
	.14355840J	.06928058J	-.12017563J	.02365708J	.00000002
	.15097476M	.20329106M	.15973159M	.98524423M	
60.00	.04335151	.19295408	.10324145	.97035579	.99999983
	.14857400J	.07890511J	-.12206209J	.02972813J	.00000001
	.15476946M	.20846413M	.15986854M	.97081106M	
62.00	.03963701	.19176105	.10117308	.95428953	.99999993
	.15311304J	.08939977J	-.12347253J	.03663809J	-.00000000
	.15816034M	.21157650M	.15962912M	.95499259M	
64.00	.03562166	.18701751	.09902550	.93648687	.99999995
	.15702561J	.10077698J	-.12431852J	.04438084J	.00000002
	.16101535M	.21244187M	.15893754M	.93753789M	

66.00	.03132953	.17808129	.09680191	.91658434	.99999986
	.16015109J	.11302217J	-.12450711J	.05293339J	.00000003
	.16318673M	.21091931M	.15771058M	.91811153M	
68.00	.02678369	.16415542	.09449610	.89410239	.99999999
	.16231041J	.12607971J	-.12393410J	.06224781J	.00000004
	.16450542M	.20698573M	.15584984M	.89626662M	
70.00	.02200959	.14423793	.09208600	.86840836	.99999991
	.16329726J	.13983090J	-.12247722J	.07223822J	.00000003
	.16477383M	.20089116M	.15323348M	.87140773M	
72.00	.01703956	.11705348	.08952474	.83866799	1.00000010
	.16286601J	.15405837J	-.11998780J	.08275876J	.00000006
	.16375494M	.19348255M	.14970554M	.84274136M	
74.00	.01191937	.08096137	.08672787	.80377676	.99999980
	.16071672J	.16839082J	-.11628151J	.09356838J	.00000003
	.16115810M	.18684274M	.14506244M	.80920462M	
76.00	.00671938	.03382819	.08355425	.76226747	1.00000010
	.15647311J	.18221014J	-.11112634J	.10427054J	.00000006
	.15661731M	.18532371M	.13903372M	.76936599M	
78.00	.00155240	-.02714517	.07977640	.71217966	1.00000000
	.14965373J	.19450139J	-.10422901J	.11421371J	.00000004
	.14966177M	.19638648M	.13125533M	.72127986M	
80.00	-.00339412	-.10566276	.07503389	.65087929	.99999990
	.13962957J	.20359554J	-.09521901J	.12231811J	-.00000003
	.13967081M	.22938126M	.12123013M	.66227303M	
82.00	-.00780185	-.20665600	.06875839	.57480920	.99999990
	.12556591J	.20672954J	-.08363328J	.12677490J	.00000001
	.12580805M	.29230772M	.10826930M	.58862338M	
84.00	-.01111795	-.33670001	.06005069	.47915709	1.00000000
	.10634176J	.19926775J	-.06890925J	.12450646J	.00000007
	.10692136M	.39124740M	.09140334M	.49506905M	
86.00	-.01236165	-.50449623	.04747539	.35744842	.99999997
	.08044417J	.17329611J	-.05040638J	.11017813J	.00000002
	.08138842M	.53343039M	.06924388M	.37404356M	
88.00	-.00975386	-.72121965	.02871539	.20118364	.99999995
	.04585343J	.11503024J	-.02751432J	.07435158J	.00000000
	.04687936M	.73033535M	.03976948M	.21448313M	
90.00	.00000002	-1.00000060	-.00000006	-.00000045	1.00000000
	-.00000009J	-.00000029J	.00000005J	-.00000018J	-.00000003
	.00000010M	1.00000050M	.00000008M	.00000049M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.250	.250	1.000

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.17647061	.00000000	1.17647060	1.00000000
2.00	.01419184	-.17512025	.01423200	1.17621540	1.00000000
4.00	.02817940	-.17108259	.02850091	1.17544710	.99999995
6.00	.04175795	-.16439872	.04284445	1.17415730	.99999988
8.00	.05472181	-.15513715	.05730204	1.17233180	.99999987
10.00	.06686359	-.14339407	.07191587	1.16994990	.99999985
12.00	.07797323	-.12929389	.08673202	1.16698380	.99999978
14.00	.08783641	-.11298987	.10180225	1.16339780	.99999976
16.00	.09623231	-.09466498	.11718604	1.15914620	.99999974
18.00	.10293013	-.07453299	.13295371	1.15417170	.99999970
20.00	.10768385	-.05284050	.14919097	1.14840220	.99999987
22.00	.11022366	-.02986907	.16600583	1.14174590	.99999990
22.25	.11037070	-.02692321	.16815484	1.14084600	.99999983
22.50	.11047780	-.02396305	.17031540	1.13993010	.99999980
22.75	.11054429	-.02098920	.17248774	1.13899810	.99999973
23.00	.11056945	-.01800239	.17467227	1.13804970	.99999996
23.25	.11055259	-.01500328	.17686934	1.13708430	.99999978
23.50	.11049303	-.01199266	.17907930	1.13610200	.99999995
23.75	.11038997	-.00897118	.18130259	1.13510230	1.00000000
24.00	.11024271	-.00593961	.18353958	1.13408470	.99999981
24.25	.11005043	-.00289874	.18579071	1.13304910	.99999976

24.50	.10981236	.00015067	.18805647	1.13199520	.99999995
24.75	.10952764	.00320791	.19033730	1.13092240	.99999992
25.00	.10919542	.00627218	.19263370	1.12983040	.99999987
26.00	.10737361	.01858242	.20198573	1.12526230	.99999981
28.00	.10114645	.04327781	.22162418	1.11506400	.99999982
30.00	.09090541	.06765842	.24288937	1.10317800	.99999981
32.00	.07562402	.09113828	.26652301	1.08911090	.99999991
34.00	.05347969	.11296743	.29392096	1.07199410	.99999984
34.25	.05010222	.11553080	.29770623	1.06957830	.99999989
34.50	.04659352	.11804837	.30156337	1.06710060	.99999993
34.75	.04300329	.12051615	.30544427	1.06457980	.99999985
35.00	.03953233	.12292676	.30915995	1.06209490	.99999990
35.25	.03825286	.12523703	.31077518	1.06046860	.99999996

IMAGINARY

35.50	.03033911	.12762242	.31853149	1.05619620	.99999994
	-.00669236J	.00011081J	.00622800J	-.00266678J	.00000000
	.03106846M	.12762246M	.31859235M	1.05619950M	
35.75	.02088809	.12992879	.32762405	1.05128130	.99999998
	-.00670224J	.00007962J	.00620922J	-.00268321J	.00000000
	.02193701M	.12992881M	.32768288M	1.05128460M	
36.00	.01204765	.13211715	.33605357	1.04657940	.99999992
	-.00482051J	.00003442J	.00444588J	-.00193884J	.00000000
	.01297625M	.13211715M	.33608296M	1.04658110M	
36.25	.00378988	.13419436	.34385402	1.04208270	.99999996
	-.00177838J	.00000416J	.00163281J	-.00071857J	-.00000000
	.00418639M	.13419435M	.34385789M	1.04208290M	
36.50	-.00391299	.13616693	.35105886	1.03778330	.99999990
	.00208288J	.00000524J	-.00190381J	.00084547J	.00000000
	.00443282M	.13616693M	.35106401M	1.03778360M	
36.75	-.01108860	.13804092	.35770081	1.03367320	1.00000000
	.00655690J	.00004878J	-.00596630J	.00267369J	-.00000000
	.01288216M	.13804092M	.35775055M	1.03367660M	
37.00	-.01776456	.13982239	.36381207	1.02974390	1.00000000
	.01150247J	.00014287J	-.01041945J	.00471158J	-.00000000
	.02116333M	.13982246M	.36396123M	1.02975460M	

37.25	-.02396760	.14151670	.36942353	1.02598740	.99999991
	.01681543J	.00029365J	-.01516383J	.00691887J	.00000000
	.02927806M	.14151700M	.36973460M	1.02601060M	
37.50	-.02972381	.14312902	.37456507	1.02239560	1.00000000
	.02241546J	.00050580J	-.02012317J	.00926437J	-.00000000
	.03722845M	.14312990M	.37510522M	1.02243750M	
37.75	-.03505858	.14466421	.37926546	1.01896040	.99999994
	.02823877J	.00078296J	-.02523730J	.01172316J	-.00000000
	.04501702M	.14466632M	.38010420M	1.01902780M	
38.00	-.03999641	.14612668	.38355215	1.01567400	.99999993
	.03423365J	.00112793J	-.03045785J	.01427487J	-.00000000
	.05264652M	.14613103M	.38475957M	1.01577420M	
40.00	-.06783038	.15564236	.40583828	.99387444	1.00000000
	.08446391J	.00649294J	-.07250040J	.03646017J	.00000000
	.10832872M	.15577773M	.41226327M	.99454298M	
42.00	-.08128542	.16215652	.41359071	.97787003	.99999997
	.13279796J	.01655064J	-.10999574J	.05927645J	.00000001
	.15570040M	.16299895M	.42796768M	.97966498M	
44.00	-.08670651	.16628566	.41337988	.96537789	.99999998
	.17619006J	.03106089J	-.14087050J	.08125358J	.00000001
	.19636943M	.16916175M	.43672350M	.96879131M	
46.00	-.08793727	.16811141	.40903326	.95495331	.99999995
	.21434465J	.04973374J	-.16549845J	.10205307J	.00000000
	.23168209M	.17531369M	.44124589M	.96039087M	
48.00	-.08723054	.16738235	.40273262	.94575736	.99999992
	.24783154J	.07240515J	-.18489781J	.12172179J	-.00000001
	.26273492M	.18237148M	.44314868M	.95355816M	
50.00	-.08584504	.16358731	.39571511	.93744013	1.00000000
	.27751838J	.09914579J	-.20022378J	.14042143J	.00000001
	.29049237M	.19128694M	.44348620M	.94789881M	
52.00	-.08434660	.15588255	.38869909	.93026301	.99999996
	.30458617J	.13051906J	-.21279560J	.15832426J	-.00000000
	.31604917M	.20330910M	.44313535M	.94363967M	
54.00	-.08244281	.14253307	.38218112	.92618927	.99999990
	.33154355J	.16880338J	-.22496679J	.17555691J	-.00000004
	.34164007M	.22093043M	.44347768M	.94268063M	
54.25	-.08206745	.14025658	.38142976	.92624777	1.00000000
	.33525602J	.17445151J	-.22676437J	.17766398J	-.00000002
	.34515454M	.22384199M	.44374625M	.94313276M	
54.50	-.08161195	.13777116	.38069893	.92657545	1.00000000
	.33918120J	.18044247J	-.22873945J	.17975819J	.00000000
	.34886157M	.22702506M	.44413219M	.94385118M	

54.75	−.08103426	.13502035	.37999236	.92728871	.99999990
	.34342980J	.18689855J	−.23098580J	.18183690J	−.00000005
	.35286056M	.23056791M	.44468936M	.94494920M	
55.00	−.08025399	.13190141	.37931561	.92860599	.99999990
	.34820931J	.19404787J	−.23367948J	.18389443J	.00000000
	.35733796M	.23463281M	.44551814M	.94663944M	
55.25	−.07907756	.12817687	.37867813	.93104214	1.00000000
	.35401214J	.20242718J	−.23723874J	.18591637J	−.00000003
	.36273662M	.23959564M	.44685495M	.94942317M	
55.50	−.07663420	.12282768	.37810241	.93685642	1.00000000
	.36301528J	.21438425J	−.24351774J	.18783364J	.00000001
	.37101602M	.24707740M	.44973583M	.95550061M	

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55.75	−.06245225	.13133775	.36701023	.94076186	1.00000000
	.36539447J	.23064412J	−.24847522J	.17693346J	.00000001
	.37069313M	.26541724M	.44321150M	.95725561M	
56.00	−.05738950	.13701090	.36108508	.93704699	1.00000010
	.36266042J	.23625209J	−.24702325J	.17233857J	−.00000004
	.36717316M	.27310627M	.43749618M	.95276316M	
56.25	−.05423590	.14067391	.35679606	.93338076	1.00000000
	.36073461J	.24108987J	−.24562965J	.16964339J	−.00000009
	.36478896M	.27912985M	.43317127M	.94867197M	
56.50	−.05199983	.14335769	.35329038	.92972607	1.00000000
	.35920013J	.24558750J	−.24427652J	.16784681J	−.00000003
	.36294449M	.28436709M	.42951728M	.94475558M	
56.75	−.05033901	.14541250	.35027259	.92606924	.99999990
	.35791016J	.24988918J	−.24295353J	.16660703J	−.00000005
	.36143282M	.28911830M	.42628312M	.94093684M	
57.00	−.04908511	.14700800	.34759695	.92240313	.99999990
	.35679086J	.25406392J	−.24165364J	.16575748J	−.00000006
	.36015144M	.29352994M	.42334397M	.93717824M	
57.25	−.04814016	.14824119	.34517842	.91872342	1.00000000
	.35579835J	.25815057J	−.24037167J	.16520220J	−.00000008
	.35904030M	.29768635M	.42062653M	.93345834M	
57.50	−.04744082	.14917346	.34296190	.91502718	1.00000000
	.35490352J	.26217331J	−.23910336J	.16487967J	.00000001
	.35806024M	.30164145M	.41808285M	.92976343M	
57.75	−.04694329	.14984659	.34090902	.91131180	.99999990
	.35408587J	.26614869J	−.23784532J	.16474771J	−.00000005
	.35718408M	.30543268M	.41567938M	.92608368M	

58.00	-.04661566	.15029008	.33899205	.90757597	1.00000000
	.35332994J	.27008764J	-.23659468J	.16477578J	-.00000002
	.35639173M	.30908646M	.41339164M	.92241270M	
60.00	-.04803225	.14737904	.32672270	.87680381	1.00000000
	.34844566J	.30095542J	-.22661191J	.16880237J	-.00000008
	.35174062M	.33510407M	.39761874M	.89290489M	
62.00	-.05364218	.13519343	.31727650	.84415786	.99999990
	.34394472J	.33136766J	-.21619095J	.17680872J	-.00000007
	.34810264M	.35788516M	.38393085M	.86247539M	
64.00	-.06150587	.11462488	.30894032	.80927767	1.00000000
	.33855029J	.36136944J	-.20491026J	.18697244J	.00000000
	.34409194M	.37911308M	.37071866M	.83059559M	
66.00	-.07065751	.08558340	.30085804	.77179364	.99999990
	.33149673J	.39050779J	-.19251154J	.19831674J	-.00000005
	.33894329M	.39977598M	.35717817M	.79686569M	
68.00	-.08042765	.04762708	.29243300	.73129488	1.00000000
	.32220533J	.41802197J	-.17882573J	.21007591J	-.00000005
	.33209165M	.42072639M	.34277645M	.76087060M	
70.00	-.09023276	.00015327	.28314371	.68732291	1.00000000
	.31018690J	.44285375J	-.16374992J	.22149435J	.00000000
	.32304467M	.44285376M	.32708468M	.72213054M	
72.00	-.09947863	-.05750366	.27246376	.63937843	1.00000010
	.29500726J	.46360764J	-.14724532J	.23172375J	-.00000003
	.31132825M	.46716026M	.30970580M	.68007401M	
74.00	-.10750128	-.12598647	.25981853	.58694164	.99999990
	.27628169J	.47848880J	-.12935061J	.23974762J	.00000003
	.29645926M	.49479704M	.29023653M	.63401846M	
76.00	-.11352125	-.20581040	.24455982	.52951145	1.00000000
	.25368861J	.48522666J	-.11020860J	.24431037J	.00000000
	.27792982M	.52707004M	.26824511M	.58315515M	
78.00	-.11660662	-.29721661	.22595403	.46667015	1.00000000
	.22700315J	.48099995J	-.09010703J	.24384824J	-.00000003
	.25520096M	.56541901M	.24325809M	.52653868M	
80.00	-.11564326	-.39996433	.20318665	.39818728	.99999990
	.19615284J	.46237595J	-.06953521J	.23642327J	-.00000018
	.22770441M	.61136158M	.21475558M	.46308646M	
82.00	-.10932167	-.51304699	.17539119	.32417093	1.00000000
	.16129966J	.42530006J	-.04925505J	.21967537J	-.00000006
	.19485586M	.66640629M	.18217609M	.39159168M	
84.00	-.09615349	-.63432244	.14171517	.24528009	1.00000000
	.12295144J	.36518451J	-.03038226J	.19081789J	.00000005
	.15608507M	.73193216M	.14493539M	.31076323M	

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86.00	-.07453970	-.76008326	.10143737	.16299257	.99999998
	.08209561J	.27716697J	-.01446239J	.14671656J	-.00000002
	.11088668M	.80904145M	.10246316M	.21929962M	
88.00	-.04291624	-.88463097	.05414954	.07990586	1.00000000
	.04033748J	.15662353J	-.00351479J	.08410634J	.00000004
	.05889751M	.89838904M	.05426349M	.11601216M	
90.00	.00000010	-1.00000010	-.00000011	-.00000012	.99999980
	-.00000008J	-.00000037J	-.00000000J	-.00000021J	.00000007
	.00000013M	1.00000000M	.00000011M	.00000024M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.250	.250	1.000

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.11111115	.00000000	1.11111110	1.00000000
2.00	.00893402	-.11022865	.00896322	1.11095870	.99999978
4.00	.01772983	-.10758932	.01796382	1.11050020	.99999994
6.00	.02624838	-.10321830	.02704024	1.10973010	.99999991
8.00	.03434876	-.09715706	.03623318	1.10863960	.99999982
10.00	.04188717	-.08946453	.04558701	1.10721590	1.00000000
12.00	.04871513	-.08021669	.05515137	1.10544130	.99999977
14.00	.05467748	-.06950781	.06498352	1.10329340	.99999976
16.00	.05960907	-.05745078	.07515138	1.10074320	.99999983
18.00	.06332992	-.04417832	.08573795	1.09775370	.99999985
20.00	.06563804	-.02984504	.09684813	1.09427810	.99999996
22.00	.06629744	-.01462950	.10861921	1.09025550	.99999989
22.25	.06625033	-.01267553	.11014567	1.08971050	.99999993
22.50	.06617235	-.01071138	.11168578	1.08915540	.99999976
22.75	.06606290	-.00873751	.11323989	1.08859040	.99999992
23.00	.06592128	-.00675441	.11480852	1.08801490	.99999980
23.25	.06574679	-.00476249	.11639220	1.08742890	.99999979
23.50	.06553869	-.00276228	.11799143	1.08683220	.99999985
23.75	.06529617	-.00075419	.11960676	1.08622450	.99999990
24.00	.06501851	.00126119	.12123876	1.08560560	.99999996
24.25	.06470481	.00328338	.12288806	1.08497520	.99999999

24.50	.06435422	.00531191	.12455531	1.08433310	.99999993
24.75	.06396581	.00734631	.12624117	1.08367900	.99999994
25.00	.06353867	.00938593	.12794638	1.08301260	.99999994
26.00	.06142205	.01758577	.13497641	1.08021830	.99999982
28.00	.05496954	.03405786	.15024656	1.07393440	.99999986
30.00	.04480727	.05032620	.16774914	1.06650280	1.00000010
32.00	.02933878	.06593209	.18885892	1.05746480	.99999996
34.00	.00444460	.08018624	.21726846	1.04568250	.99999981
34.25	.00009274	.08181646	.22186266	1.04386180	.99999995
34.50	-.00475863	.08339946	.22689697	1.04190470	.99999998
34.75	-.01030490	.08492760	.23255491	1.03976030	.99999972
35.00	-.01698474	.08638741	.23925063	1.03731570	1.00000000
35.25	-.02721231	.08773101	.24927712	1.03395290	.99999985

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35.50	-.03481757	.08902738	.25673811	1.03123510	.99999994
	.00823476J	.00014696J	-.00783035J	.00210298J	-.00000000
	.03577813M	.08902750M	.25685749M	1.03123720M	
35.75	-.04028409	.09029341	.26211437	1.02904820	1.00000000
	.01390355J	.00030049J	-.01318212J	.00356780J	.00000000
	.04261592M	.09029391M	.26244563M	1.02905430M	
36.00	-.04529605	.09150896	.26701616	1.02696620	1.00000000
	.01956201J	.00049769J	-.01849283J	.00504368J	.00000000
	.04933969M	.09151031M	.26765577M	1.02697850M	
38.00	-.07166614	.09975245	.29207849	1.01362190	1.00000010
	.06869892J	.00401076J	-.06344911J	.01834954J	.00000000
	.09927526M	.09983304M	.29889067M	1.01378790M	
40.00	-.08024845	.10609083	.29918561	1.00496050	1.00000000
	.11887081J	.01138127J	-.10729743J	.03271521J	.00000000
	.14342274M	.10669956M·	.31784392M	1.00549280M	
42.00	-.07751727	.11109568	.29533907	.99990085	1.00000000
	.16655417J	.02304089J	-.14703111J	.04686479J	-.00000000
	.18370960M	.11345982M	.32991409M	1.00099850M	
44.00	-.06615813	.11493082	.28377315	.99861068	1.00000000
	.21314175J	.04011904J	-.18427764J	.06039896J	.00000000
	.22317326M	.12173179M	.33835698M	1.00043550M	

46.00	-.03687575	.11751773	.25805739	1.00791760	1.00000000
	.27320566J	.07041845J	-.23255799J	.07297174J	.00000000
	.27568306M	.13700063M	.34738570M	1.01055560M	

IMAGINARY

46.25	-.01143714	.12313925	.23652349	1.01553960	1.00000010
	.28448428J	.08132795J	-.24311287J	.06905720J	-.00000001
	.28471409M	.14757205M	.33918611M	1.01788480M	
46.50	.00016946	.13039515	.22548878	1.01356440	1.00000010
	.27363205J	.08239734J	-.23383940J	.06389317J	.00000000
	.27363210M	.15424726M	.32484773M	1.01557620M	
46.75	.00629248	.13488620	.21948282	1.01172080	1.00000000
	.26773199J	.08356762J	-.22850148J	.06138569J	.00000000
	.26780592M	.15867524M	.31683691M	1.01358130M	
47.00	.01062463	.13848331	.21511715	1.00990970	1.00000010
	.26349253J	.08479241J	-.22449894J	.05973436J	.00000001
	.26370664M	.16238035M	.31092629M	1.01167470M	
47.25	.01397001	.14158702	.21165195	1.00810910	1.00000000
	.26018721J	.08605920J	-.22125335J	.05855267J	.00000000
	.26056197M	.16568967M	.30618555M	1.00980810M	
47.50	.01666896	.14436419	.20877339	1.00630970	1.00000010
	.25750437J	.08736173J	-.21851503J	.05767879J	.00000001
	.25804332M	.16873971M	.30221705M	1.00796130M	
47.75	.01890366	.14690288	.20631315	1.00450630	1.00000000
	.25527501J	.08869624J	-.21614771J	.05702700J	-.00000000
	.25597398M	.17160267M	.29880587M	1.00612370M	
48.00	.02078517	.14925594	.20416855	1.00269600	1.00000020
	.25339470J	.09006017J	-.21406677J	.05654553J	.00000001
	.25424574M	.17432202M	.29581984M	1.00428910M	
50.00	.02882447	.16401314	.19308888	.98779209	.99999994
	.24539763J	.10187603J	-.20320838J	.05621002J	-.00000000
	.24708469M	.19307779M	.28031582M	.98939010M	
52.00	.03079175	.17424390	.18688377	.97192698	.99999999
	.24342265J	.11509514J	-.19725233J	.05926083J	.00000000
	.24536242M	.20882487M	.27172417M	.97373193M	
54.00	.02985535	.18100355	.18263456	.95494601	.99999988
	.24397316J	.12959841J	-.19327488J	.06431906J	-.00000002
	.24579309M	.22261633M	.26591457M	.95710961M	
56.00	.02711834	.18437711	.17935171	.93672636	1.00000000
	.24565312J	.14533033J	-.19012058J	.07091464J	-.00000001
	.24714542M	.23476759M	.26136731M	.93940680M	

58.00	.02310430	.18415299	.17658559	.91712700	.99999992
	.24769356J	.16224039J	-.18717839J	.07881501J	-.00000003
	.24876878M	.24542670M	.25732901M	.92050732M	
60.00	.01811054	.17996818	.17409359	.89597117	.99999990
	.24958035J	.18025808J	-.18406675J	.08786645J	-.00000002
	.25023657M	.25471851M	.25335576M	.90026932M	
62.00	.01233155	.17134712	.17172156	.87303243	.99999990
	.25091736J	.19927496J	-.18051572J	.09793665J	-.00000002
	.25122020M	.26281237M	.24914698M	.87850850M	
64.00	.00591340	.15770804	.16935102	.84802196	1.00000010
	.25136406J	.21912626J	-.17631337J	.10888542J	.00000005
	.25143360M	.26997804M	.24447120M	.85498378M	
66.00	-.00101690	.13835348	.16686945	.82057412	1.00000000
	.25060118J	.23956698J	-.17127705J	.12054313J	-.00000001
	.25060324M	.27664783M	.23912599M	.82938081M	
68.00	-.00833210	.11245391	.16415071	.79023028	1.00000000
	.24830932J	.26024186J	-.16523680J	.13268930J	.00000006
	.24844907M	.28349904M	.23291340M	.80129292M	
70.00	-.01588803	.07902465	.16103741	.75641927	1.00000000
	.24415304J	.28064147J	-.15802544J	.14502555J	-.00000000
	.24466944M	.29155536M	.22562155M	.77019641M	
72.00	-.02350624	.03690003	.15732339	.71843611	1.00000010
	.23776734J	.30004196J	-.14947262J	.15713867J	-.00000007
	.23892645M	.30230248M	.21700855M	.73542028M	
74.00	-.03095256	-.01529357	.15273248	.67541759	.99999990
	.22874587J	.31741906J	-.13940360J	.16844813J	.00000001
	.23083052M	.31778727M	.20678630M	.69610609M	
76.00	-.03790785	-.07915984	.14689209	.62631951	1.00000020
	.21662979J	.33132365J	-.12764339J	.17812874J	.00000002
	.21992151M	.34064885M	.19460246M	.65115740M	
78.00	-.04392821	-.15653802	.13929897	.56989874	.99999980
	.20090093J	.33970759J	-.11402928J	.18500075J	-.00000003
	.20564744M	.37403930M	.18001911M	.59917429M	
80.00	-.04838727	-.24946908	.12927583	.50471606	1.00000000
	.18098106J	.33967404J	-.09843816J	.18736788J	-.00000003
	.18733785M	.42144189M	.16248788M	.53837256M	
82.00	-.05039607	-.36008401	.11591641	.42917894	.99999988
	.15624743J	.32713222J	-.08083715J	.18278887J	.00000006
	.16417375M	.48649355M	.14131970M	.46648293M	
84.00	-.04869240	-.49033035	.09802439	.34167869	1.00000010
	.12608087J	.29633425J	-.06137523J	.16775967J	.00000009
	.13515670M	.57292043M	.11565336M	.38064107M	

86.00	-.04149805	-.64141284	.07405659	.24089912	.99999991
	.08997530J	.23929853J	-.04053800J	.13729957J	-.00000002
	.09908402M	.68459784M	.08442576M	.27727884M	
88.00	-.02635585	-.81272743	.04210592	.12644559	.99999999
	.04775914J	.14520016J	-.01939955J	.08447366J	.00000004
	.05454875M	.82559612M	.04636001M	.15206671M	
90.00	.00000008	-1.00000030	-.00000010	-.00000021	.99999990
	-.00000012J	-.00000042J	.00000004J	-.00000025J	.00000018
	.00000015M	1.00000020M	.00000011M	.00000033M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.250	.250	1.000

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.05263160	.00000000	1.05263160	1.00000000
2.00	.00423115	-.05219830	.00424697	1.05256330	.99999981
4.00	.00839224	-.05090190	.00851910	1.05235810	.99999989
6.00	.01241244	-.04875339	.01284247	1.05201360	.99999994
8.00	.01621926	-.04577094	.01724503	1.05152580	.99999992
10.00	.01973755 .	-.04198024	.02175786	1.05088920	.99999992
12.00	.02288804	-.03741459	.02641656	1.05009620	.99999981
14.00	.02558530	-.03211506	.03126339	1.04913720	.99999974
16.00	.02773493	-.02613119	.03635015	1.04799970	.99999982
18.00	.02922911	-.01952122	.04174248	1.04666780	.99999973
20.00	.02993949	-.01235319	.04752666	1.04512160	.99999991
22.00	.02970548	-.00470624	.05382092	1.04333500	.99999976
22.25	.02960000	-.00372119	.05465124	1.04309330	.99999990
22.50	.02947605	-.00273023	.05549248	1.04284710	.99999986
22.75	.02933312	-.00173364	.05634507	1.04259660	.99999999
23.00	.02917064	-.00073158	.05720945	1.04234140	.99999976
23.25	.02898810	.00027573	.05808611	1.04208180	1.00000000
23.50	.02878486	.00128802	.05897553	1.04181730	.99999979
23.75	.02856032	.00230516	.05987825	1.04154820	1.00000000
24.00	.02831383	.00332686	.06079481	1.04127400	.99999980
24.25	.02804468	.00435285	.06172586	1.04099490	.99999987

24.50	.02775216	.00538300	.06267198	1.04071070	.99999991
24.75	.02743549	.00641701	.06363389	1.04042130	.99999999
25.00	.02709382	.00745461	.06461228	1.04012640	.99999984
26.00	.02545925	.01163582	.06870681	1.03889100	.99999996
28.00	.02066249	.02008525	.07798224	1.03611570	1.00000000
30.00	.01307209	.02849810	.08940270	1.03283210	.99999990
31.00	.00773592	.03261503	.09637912	1.03093640	.99999985
31.25	.00618378	.03362795	.09830951	1.03042890	.99999978
31.50	.00452822	.03463264	.10032985	1.02990610	.99999998
31.75	.00275860	.03562821	.10245024	1.02936650	.99999989
32.00	.00086264	.03661345	.10468238	1.02880880	.99999983
32.25	-.00117455	.03758715	.10704050	1.02823120	.99999987
32.50	-.00337077	.03854789	.10954161	1.02763160	.99999998
32.75	-.00574801	.03949412	.11220681	1.02700720	.99999988
33.00	-.00833345	.04042381	.11506212	1.02635500	.99999995
33.25	-.01116213	.04133487	.11814124	1.02567070	.99999987
33.50	-.01427952	.04222444	.12148784	1.02494900	.99999983
33.75	-.01774733	.04308900	.12516137	1.02418260	.99999997
34.00	-.02165294	.04392414	.12924603	1.02336100	.99999992
34.25	-.02612690	.04472357	.13386787	1.02246880	.99999991
34.50	-.03138273	.04547793	.13923332	1.02148060	.99999996
34.75	-.03782040	.04617164	.14572959	1.02034880	.99999993
35.00	-.04641078	.04677050	.15429842	1.01895780	1.00000000
35.25	-.06325628	.04709070	.17087181	1.01658120	.99999982

IMAGINARY

35.50	-.07000596	.04761274	.17757440	1.01539810	1.00000000
	.02052306J	.00061100J	-.01995174J	.00244437J	.00000000
	.07295225M	.04761666M	.17869174M	1.01540100M	

35.75	-.07154727	.04825375	.17919423	1.01483590	1.00000000
	.03107491J	.00100677J	-.03016539J	.00371023J	.00000000
	.07800425M	.04826425M	.18171549M	1.01484260M	
36.00	-.07267640	.04888516	.18040276	1.01432620	1.00000000
	.04016097J	.00140957J	-.03892825J	.00480524J	.00000000
	.08303471M	.04890548M	.18455504M	1.01433750M	
38.00	-.06733500	.05381442	.17594068	1.01225530	.99999986
	.10390607J	.00623878J	-.09956002J	.01241495J	.00000000
	.12381629M	.05417485M	.20215667M	1.01233140M	
38.25	-.06470883	.05445157	.17349090	1.01229570	1.00000000
	.11190680J	.00713302J	-.10707661J	.01331858J	.00000000
	.12926857M	.05491679M	.20387371M	1.01238320M	
38.50	-.06151180	.05510663	.17049844	1.01242920	1.00000000
	.12008685J	.00812252J	-.11474570J	.01421490J	.00000000
	.13492425M	.05570203M	.20551470M	1.01252890M	
38.75	-.05763129	.05578765	.16685893	1.01267530	1.00000010
	.12853816J	.00922695J	-.12265560J	.01510353J	.00000000
	.14086668M	.05654555M	.20709007M	1.01278790M	
39.00	-.05287885	.05650731	.16239665	1.01306520	.99999997
	.13740416J	.01047708J	-.13094384J	.01598358J	-.00000000
	.14722797M	.05747039M	.20861198M	1.01319120M	
39.25	-.04690851	.05728790	.15678779	1.01365510	.99999993
	.14693704J	.01192675J	-.13985226J	.01685347J	-.00000000
	.15424299M	.05851625M	.21009775M	1.01379510M	
39.50	-.03896468	.05817686	.14932290	1.01456360	1.00000000
	.15767046J	.01368863J	-.14989247J	.01770970J	-.00000000
	.16241373M	.05976559M	.21157760M	1.01471810M	
39.75	-.02660140	.05932564	.13769891	1.01616380	.99999998
	.17129044J	.01611330J	-.16268236J	.01854104J	-.00000000
	.17334373M	.06147496M	.21313502M	1.01633290M	

IMAGINARY

40.00	.00836881	.06374748	.10454279	1.01913120	.99999995
	.17136982J	.01870083J	-.16275981J	.01640469J	-.00000000
	.17157404M	.06643389M	.19344237M	1.01926320M	
40.25	.01676617	.06642060	.09655506	1.01845560	.99999998
	.15700153J	.01808277J	-.14894564J	.01460651J	-.00000000
	.15789421M	.06883809M	.17750403M	1.01856030M	
40.50	.02127678	.06832914	.09230688	1.01779770	1.00000000
	.14881097J	.01785364J	-.14099368J	.01365252J	.00000000
	.15032433M	.07062311M	.16852233M	1.01788920M	

40.75	.02438351	.06996355	.08940636	1.01714080	.99999995
	.14296770J	.01777535J	-.13527489J	.01300732J	.00000001
	.14503213M	.07218630M	.16215052M	1.01722390M	
41.00	.02672637	.07144791	.08723624	1.01648080	1.00000000
	.13845458J	.01778433J	-.13082362J	.01253311J	.00000000
	.14101053M	.07362803M	.15724179M	1.01655800M	
41.25	.02858280	.07283538	.08552862	1.01581550	1.00000010
	.13481892J	.01785230J	-.12720937J	.01217019J	.00000001
	.13781551M	.07499131M	.15328851M	1.01588830M	
41.50	.03010120	.07415396	.08414012	1.01514380	1.00000000
	.13181201J	.01796366J	-.12419527J	.01188646J	.00000000
	.13520535M	.07629877M	.15001341M	1.01521330M	
41.75	.03137098	.07542039	.08298441	1.01446520	.99999982
	.12928018J	.01810881J	-.12163477J	.01166252J	.00000000
	.13303196M	.07756394M	.14724615M	1.01453220M	
42.00	.03245033	.07664525	.08200522	1.01377930	1.00000000
	.12712090J	.01828132J	-.11943003J	.01148567J	.00000000
	.13119735M	.07879531M	.14487369M	1.01384430M	
44.00	.03738723	.08550234	.07747174	1.00799400	.99999990
	.11743084J	.02028610J	-.10902401J	.01107017J	-.00000000
	.12323882M	.08787591M	.13374642M	1.00805470M	
46.00	.03932947	.09323549	.07534694	1.00162380	1.00000010
	.11414872J	.02297702J	-.10469169J	.01163234J	.00000000
	.12073415M	.09602500M	.12898647M	1.00169130M	
48.00	.03997650	.09999238	.07399988	.99460451	.99999997
	.11359137J	.02615273J	-.10289576J	.01279473J	.00000000
	.12042059M	.10335589M	.12674194M	.99468679M	
50.00	.03986437	.10569256	.07293015	.98686987	.99999994
	.11444592J	.02976029J	-.10237808J	.01444925J	-.00000000
	.12119008M	.10980251M	.12569836M	.98697564M	
52.00	.03922547	.11018140	.07193440	.97834112	1.00000000
	.11608397J	.03378859J	-.10254288J	.01656086J	-.00000000
	.12253214M	.11524586M	.12525813M	.97848127M	
54.00	.03818114	.11325970	.07091835	.96892174	1.00000000
	.11814472J	.03824166J	-.10305581J	.01912067J	-.00000001
	.12416108M	.11954155M	.12509961M	.96911038M	
56.00	.03680375	.11468818	.06983615	.95849178	1.00000000
	.12038987J	.04312872J	-.10370399J	.02212956J	-.00000000
	.12588978M	.12252944M	.12502642M	.95874720M	
58.00	.03514112	.11418408	.06866588	.94690051	1.00000000
	.12264270J	.04845925J	-.10433715J	.02559084J	-.00000001
	.12757793M	.12404153M	.12490493M	.94724625M	

60.00	.03322762	.11141172	.06739790	.93395754	.99999985
	.12475763J	.05423895J	-.10483822J	.02950588J	.00000001
	.12910670M	.12391300M	.12463357M	.93442350M	
62.00	.03108985	.10597000	.06602866	.91942195	.99999996
	.12660374J	.06046596J	-.10510748J	.03387056J	.00000000
	.13036520M	.12200726M	.12412641M	.92004561M	
64.00	.02874969	.09737440	.06455620	.90298721	1.00000000
	.12805426J	.06712605J	-.10505248J	.03867183J	-.00000001
	.13124191M	.11826952M	.12330258M	.90381492M	
66.00	.02622650	.08503345	.06297700	.88426273	1.00000000
	.12897852J	.07418587J	-.10458067J	.04388286J	-.00000000
	.13161796M	.11284604M	.12207874M	.88535093M	
68.00	.02353862	.06821748	.06128241	.86274950	1.00000000
	.12923477J	.08158311J	-.10359314J	.04945630J	.00000000
	.13136092M	.10634580M	.12036225M	.86416585M	
70.00	.02070503	.04601754	.05945480	.83780744	1.00000000
	.12866318J	.08921234J	-.10197883J	.05531438J	.00000002
	.13031850M	.10038155M	.11804471M	.83963146M	
72.00	.01774723	.01729013	.05746211	.80861296	1.00000010
	.12707680J	.09690264J	-.09960768J	.06133340J	.00000001
	.12831008M	.09843308M	.11499384M	.81093569M	
74.00	.01469194	-.01941503	.05525081	.77410124	.99999980
	.12425153J	.10438533J	-.09632347J	.06732059J	.00000003
	.12511712M	.10617551M	.11104441M	.77702303M	
76.00	.01157544	-.06595414	.05273532	.73288937	1.00000000
	.11991150J	.11124149J	-.09193424J	.07297653J	.00000003
	.12046890M	.12932369M	.10598547M	.73651367M	
78.00	.00845003	-.12472085	.04978278	.68317064	.99999995
	.11371127J	.11682294J	-.08620134J	.07783754J	-.00000000
	.11402480M	.17088852M	.09954394M	.68759057M	
80.00	.00539552	-.19882905	.04619014	.62257006	.99999997
	.10520946J	.12012355J	-.07882472J	.08118092J	.00000001
	.10534771M	.23229863M	.09136118M	.62784060M	
82.00	.00253802	-.29236290	.04164914	.54794237	1.00000000
	.09383345J	.11957270J	-.06942537J	.08187141J	.00000002
	.09386777M	.31586974M	.08096007M	.55402505M	
84.00	.00008295	-.41072322	.03569205	.45509133	.99999996
	.07882879J	.11269274J	-.05752371J	.07810380J	-.00000001
	.07882884M	.42590281M	.06769712M	.46174486M	
86.00	-.00162601	-.56111265	.02760481	.33837214	1.00000000
	.05918614J	.09551553J	-.04251451J	.06696083J	.00000004
	.05920847M	.56918417M	.05069033M	.34493399M	

88.00	-.00199955	-.75320100	.01628466	.19013845	.99999996
	.03353628J	.06156227J	-.02364344J	.04363336J	-.00000000
	.03359584M	.75571268M	.02870892M	.19508075M	
90.00	.00000000	-1.00000050	-.00000003	-.00000043	.99999990
	-.00000005J	-.00000011J	.00000003J	-.00000008J	-.00000006
	.00000005M	1.00000040M	.00000005M	.00000044M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.400	.400	.700

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.34228186	.00000000	1.34228180	.99999989
5.00	.04992286	-.33012694	.02556554	1.34204360	.99999991
10.00	.09794831	-.29450892	.05037978	1.34145200	1.00000000
15.00	.14315335	-.23816565	.07244298	1.34107360	.99999973
20.00	.18991974	-.16712065	.08263968	1.34337660	.99999987
	IMAGINARY				
25.00	.29396573	-.10344650	.00356603	1.36820030	1.00000000
	-.10579460J	.03530418J	.15043252J	-.03402873J	-.00000000
	.31242334M	.10930490M	.15047477M	1.36862330M	
30.00	.08957672	.04685648	.32908116	1.29947560	.99999990
	-.14254297J	.02834248J	.18190630J	-.04608694J	.00000000
	.16835227M	.05476154M	.37601105M	1.30029250M	
35.00	-.00291667	.09774064	.46747844	1.30450950	1.00000000
	.02153058J	.00069655J	-.02530333J	.00523437J	-.00000000
	.02172724M	.09774312M	.46816272M	1.30451990M	
	-82.28PA	.40PA	-3.09PA	.22PA	
35.25	-.00375635	.09556068	.47099115	1.31114870	1.00000000
	.03485866J	.00184221J	-.04095344J	.00792362J	.00000000
	.03506046M	.09557844M	.47276827M	1.31117260M	
	-83.84PA	1.10PA	-4.96PA	.34PA	
35.50	-.00371451	.09099332	.47469037	1.32150760	.99999999
	.05177797J	.00410090J	-.06096955J	.01051213J	.00000000
	.05191104M	.09108569M	.47858983M	1.32154930M	
	-85.89PA	2.58PA	-7.31PA	.45PA	
	IMAGINARY				
35.75	.01489785	.08354263	.45896538	1.34226210	.99999998
	.07655505J	.01910139J	-.09607419J	-.00239810J	-.00000000
	.07799116M	.08569850M	.46891307M	1.34226420M	
	78.98PA	12.87PA	-11.82PA	-.10PA	

36.00	.03007280	.09169410	.43934829	1.33956870	.99999994
	.07536930J	.02920861J	-.09919251J	-.01655180J	.00000000
	.08114743M	.09623384M	.45040656M	1.33967090M	
	68.24PA	17.66PA	-12.72PA	-.70PA	
36.25	.03850478	.09833849	.42823538	1.33700120	.99999992
	.07542960J	.03552186J	-.10175750J	-.02478708J	.00000000
	.08468909M	.10455745M	.44015919M	1.33723090M	
	62.95PA	19.86PA	-13.36PA	-1.06PA	
36.50	.04455193	.10448176	.42012351	1.33444630	.99999977
	.07592539J	.04055955J	-.10414342J	-.03101279J	.00000001
	.08803147M	.11207816M	.43283901M	1.33480650M	
	59.59PA	21.21PA	-13.92PA	-1.33PA	
36.75	.04925885	.11035377	.41368631	1.33187660	.99999999
	.07666410J	.04491176J	-.10643122J	-.03613915J	.00000000
	.09112529M	.11914285M	.42715800M	1.33236680M	
	57.27PA	22.14PA	-14.42PA	-1.55PA	
37.00	.05307858	.11605006	.40834609	1.32927980	1.00000010
	.07756307J	.04882972J	-.10865312J	-.04055116J	.00000000
	.09398598M	.12590455M	.42255417M	1.32989810M	
	55.61PA	22.81PA	-14.90PA	-1.74PA	
37.25	.05625660	.12161999	.40378859	1.32664950	.99999996
	.07857783J	.05244727J	-.11082509J	-.04445249J	.00000000
	.09663996M	.13244674M	.41872118M	1.32739400M	
	54.39PA	23.32PA	-15.34PA	-1.91PA	
37.50	.05894389	.12709234	.39982021	1.32398200	.99999985
	.07968127J	.05584555J	-.11295605J	-.04796562J	.00000000
	.09911350M	.13882070M	.41546992M	1.32485050M	
	53.50PA	23.72PA	-15.77PA	-2.07PA	
37.75	.06124079	.13248543	.39631181	1.32127500	.99999988
	.08085554J	.05907773J	-.11505146J	-.05117001J	.00000000
	.10143003M	.14506056M	.41267406M	1.32226540M	
	52.85PA	24.03PA	-16.18PA	-2.21PA	
38.00	.06321815	.13781123	.39317214	1.31852690	.99999994
	.08208814J	.06218093J	-.11711479J	-.05412048J	.00000000
	.10360983M	.15118995M	.41024407M	1.31963710M	
	52.39PA	24.28PA	-16.58PA	-2.35PA	
38.25	.06492809	.14307797	.39033408	1.31573670	.99999991
	.08336988J	.06518216J	-.11914827J	-.05685644J	.00000000
	.10567021M	.15722601M	.40811395M	1.31696450M	
	52.08PA	24.49PA	-16.97PA	-2.47PA	
38.50	.06641021	.14829153	.38774657	1.31290400	.99999999
	.08469385J	.06810177J	-.12115342J	-.05940713J	.00000000
	.10762604M	.16318158M	.40623336M	1.31424730M	
	51.89PA	24.66PA	-17.35PA	-2.59PA	

38.75	.06769537	.15345597	.38536994	1.31002820	.99999997
	.08605475J	.07095558J	-.12313134J	-.06179471J	.00000001
	.10949010M	.16906634M	.40456311M	1.31148480M	
	51.80PA	24.81PA	-17.71PA	-2.70PA	
39.00	.06880825	.15857415	.38317225	1.30710930	.99999987
	.08744819J	.07375607J	-.12508258J	-.06403652J	-.00000000
	.11127337M	.17488772M	.40307148M	1.30867690M	
	51.80PA	24.94PA	-18.07PA	-2.80PA	
39.25	.06976887	.16364810	.38112814	1.30414760	1.00000000
	.08887071J	.07651337J	-.12700759J	-.06614624J	-.00000001
	.11298539M	.18065159M	.40173321M	1.30582390M	
	51.86PA	25.05PA	-18.43PA	-2.90PA	
39.50	.07059371	.16867919	.37921649	1.30114300	1.00000000
	.09031937J	.07923583J	-.12890656J	-.06813486J	-.00000000
	.11463447M	.18636250M	.40052721M	1.30292570M	
	51.98PA	25.16PA	-18.77PA	-2.99PA	
39.75	.07129653	.17366835	.37741969	1.29809580	.99999996
	.09179182J	.08193039J	-.13077966J	-.07001117J	.00000000
	.11622793M	.19202417M	.39943576M	1.29998230M	
	52.16PA	25.25PA	-19.11PA	-3.08PA	
40.00	.07188896	.17861608	.37572318	1.29500650	.99999992
	.09328589J	.08460295J	-.13262682J	-.07178255J	.00000000
	.11777215M	.19763947M	.39844419M	1.29699440M	
	52.38PA	25.34PA	-19.44PA	-3.17PA	
45.00	.06975755	.26826002	.35171395	1.22530030	1.00000010
	.12586297J	.13831241J	-.16381435J	-.09024544J	.00000000
	.14390136M	.30181742M	.38799206M	1.22861910M	
50.00	.05400147	.33531119	.33308590	1.14455860	.99999999
	.15965684J	.20071463J	-.18278605J	-.08236513J	-.00000001
	.16854217M	.39079399M	.37994336M	1.14751830M	
55.00	.03116528	.37145423	.31578417	1.05775480	.99999974
	.19016602J	.27757879J	-.18868812J	-.05207823J	-.00000001
	.19270285M	.46371135M	.36786252M	1.05903600M	
60.00	.00336395	.36737028	.29979863	.96646597	.99999990
	.21313196J	.37017790J	-.18178978J	-.00366133J	.00000000
	.21315850M	.52152909M	.35060909M	.96647290M	
65.00	-.02790100	.31132456	.28426072	.86785638	1.00000010
	.22422613J	.47442525J	-.16264369J	.05760990J	-.00000002
	.22595535M	.56745246M	.32750132M	.86976640M	
70.00	-.06004875	.18788144	.26610285	.75450478	1.00000010
	.21880414J	.57758090J	-.13164724J	.12476938J	.00000001
	.22689447M	.60737066M	.29688671M	.76475149M	

75.00	-.08756715	-.02088128	.23902366	.61473079	.99999990
	.19197333J	.65130327J	-.08972261J	.18600747J	-.00000004
	.21100181M	.65163791M	.25530855M	.64225595M	
80.00	-.09935129	-.32539183	.19250365	.43559291	1.00000000
	.14029467J	.63982670J	-.04122773J	.21770420J	.00000001
	.17191065M	.71781477M	.19686894M	.48696641M	
85.00	-.07662467	-.69558618	.11362828	.21610699	.99999997
	.06810717J	.45185311J	-.00069294J	.17527566J	-.00000001
	.10251794M	.82946450M	.11363039M	.27825130M	
90.00	.00000009	-1.00000010	-.00000008	-.00000007	.99999990
	-.00000005J	-.00000051J	-.00000003J	-.00000024J	.00000012
	.00000010M	1.00000006M	.00000009M	.00000026M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.400	.400	.700

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.28205132	.00000000	1.28205130	1.00000000
5.00	.04171273	-.27212447	.01503221	1.28187580	.99999998
10.00	.08204077	-.24296643	.02945058	1.28142510	.99999988
15.00	.12044671	-.19659139	.04158674	1.28103140	.99999986
20.00	.16123512	-.13744738	.04348452	1.28199590	.99999992
	IMAGINARY				
25.00	.25523139	-.08073418	-.03274448	1.29269970	.99999989
	-.11284556J	.02816757J	.15309276J	-.01653460J	.00000000
	.27906483M	.08550684M	.15655540M	1.29280530M	
30.00	.02086471	.03068732	.31083291	1.27609030	.99999991
	-.08097655J	.00699254J	.10225419J	-.00550246J	.00000000
	.08362140M	.03147391M	.32722012M	1.27610210M	
	-75.55PA	12.83PA	18.20PA	-.24PA	
30.25	.01304748	.03172585	.32236231	1.27925490	1.00000010
	-.06533549J	.00455024J	.08238781J	-.00351993J	-.00000000
	.06662554M	.03205049M	.33272392M	1.27925970M	
	-78.70PA	8.16PA	14.33PA	-.15PA	
30.50	.00567049	.03105547	.33378459	1.28454310	.99999993
	-.04468668J	.00213031J	.05635459J	-.00146849J	-.00000000
	.04504502M	.03112845M	.33850847M	1.28454390M	
	-82.76PA	3.92PA	9.58PA	-.06PA	
			IMAGINARY		
30.75	.01875822	.02502770	.32096979	1.29638760	.99999997
	-.00756346J	.00554736J	.00764636J	-.00720958J	.00000000
	.02022565M	.02563511M	.32106085M	1.29640760M	
	-21.95PA	12.49PA	1.36PA	-.31PA	
31.00	.03731934	.02875813	.29796872	1.29539740	1.00000000
	-.00471500J	.01124794J	.00195741J	-.01494143J	-.00000000
	.03761601M	.03087954M	.29797514M	1.29548350M	
	-7.20PA	21.36PA	.37PA	-.66PA	

31.25	.04691742	.03275341	.28636776	1.29438340	1.00000000
	-.00234366J	.01451070J	-.00223790J	-.01940899J	.00000000
	.04697591M	.03582382M	.28637650M	1.29452890M	
	-2.85PA	23.89PA	-.44PA	-.85PA	
31.50	.05357090	.03686300	.27850797	1.29334060	.99999993
	-.00018351J	.01701682J	-.00587253J	-.02284875J	.00000000
	.05357122M	.04060114M	.27856987M	1.29354230M	
	-.19PA	24.77PA	-1.20PA	-1.01PA	
31.75	.05863915	.04104551	.27265194	1.29226630	.99999989
	.00184152J	.01913406J	-.00917403J	-.02574981J	.00000000
	.05866806M	.04528626M	.27280623M	1.29252280M	
	1.79PA	24.99PA	-1.92PA	-1.14PA	
32.00	.06269487	.04528095	.26806476	1.29115880	.99999993
	.00376954J	.02101358J	-.01224488J	-.02831307J	.00000000
	.06280809M	.04991928M	.26834428M	1.29146910M	
	3.44PA	24.89PA	-2.61PA	-1.25PA	
32.25	.06604119	.04955756	.26435661	1.29001680	.99999995
	.00562371J	.02273372J	-.01514268J	-.03064248J	-.00000000
	.06628020M	.05452315M	.26478994M	1.29038060M	
	4.86PA	24.64PA	-3.27PA	-1.36PA	
32.50	.06886014	.05386717	.26129294	1.28883950	1.00000000
	.00741963J	.02434063J	-.01790392J	-.03279907J	.00000000
	.06925872M	.05911124M	.26190561M	1.28925670M	
	6.14PA	24.31PA	-3.91PA	-1.45PA	
32.75	.07127058	.05820425	.25872009	1.28762620	1.00000000
	.00916870J	.02586399J	-.02055380J	-.03482190J	.00000000
	.07185792M	.06369208M	.25953524M	1.28809690M	
	7.33PA	23.95PA	-4.54PA	-1.54PA	
33.00	.07335443	.06256412	.25653202	1.28637630	.99999994
	.01087936J	.02732394J	-.02311029J	-.03673722J	.00000000
	.07415681M	.06827054M	.25757088M	1.28690070M	
	8.43PA	23.59PA	-5.14PA	-1.63PA	
33.25	.07517096	.06694345	.25465212	1.28508970	.99999998
	.01255837J	.02873491J	-.02558713J	-.03856366J	.00000000
	.07621276M	.07284999M	.25593437M	1.28566810M	
	9.48PA	23.23PA	-5.73PA	-1.71PA	
33.50	.07676429	.07133922	.25302299	1.28376580	.99999998
	.01421109J	.03010754J	-.02799488J	-.04031469J	-.00000000
	.07806863M	.07743221M	.25456697M	1.28439860M	
	10.48PA	22.88PA	-6.31PA	-1.79PA	
33.75	.07816824	.07574878	.25160092	1.28240450	1.00000000
	.01584178J	.03144989J	-.03034178J	-.04200035J	-.00000000
	.07975735M	.08201813M	.25342384M	1.28309200M	
	11.45PA	22.54PA	-6.87PA	-1.87PA	

34.00	.07940930	.08017012	.25035143	1.28100530	.99999982
	.01745421J	.03276830J	-.03263473J	-.04362830J	.00000001
	.08130490M	.08660836M	.25246953M	1.28174800M	
	12.39PA	22.23PA	-7.42PA	-1.95PA	
34.25	.08050864	.08460118	.24924722	1.27956860	.99999990
	.01905128J	.03406777J	-.03487908J	-.04520443J	.00000000
	.08273206M	.09120292M	.25167583M	1.28036680M	
	13.31PA	21.93PA	-7.96PA	-2.02PA	
34.50	.08148338	.08904011	.24826599	1.27809390	.99999999
	.02063557J	.03535236J	-.03707939J	-.04673327J	.00000001
	.08405574M	.09580151M	.25101968M	1.27894790M	
	14.21PA	21.65PA	-8.49PA	-2.09PA	
34.75	.08234759	.09348538	.24738956	1.27658120	.99999994
	.02220938J	.03662545J	-.03923958J	-.04821844J	-.00000000
	.08528998M	.10040388M	.25048221M	1.27749150M	
	15.09PA	21.39PA	-9.01PA	-2.16PA	
35.00	.08311300	.09793535	.24660288	1.27503060	1.00000000
	.02377446J	.03788981J	-.04136269J	-.04966278J	.00000000
	.08644649M	.10500939M	.25004769M	1.27599730M	
	15.96PA	21.15PA	-9.52PA	-2.23PA	
40.00	.08644738	.18601024	.23863130	1.23621670	.99999975
	.05476626J	.06362619J	-.07840243J	-.07143538J	.00000002
	.10233519M	.19659120M	.25118088M	1.23827890M	
45.00	.07857390	.26657640	.23228242	1.18425630	1.00000010
	.08673668J	.09448091J	-.10740999J	-.07931812J	-.00000000
	.11703465M	.28282436M	.25591410M	1.18690950M	
50.00	.06510997	.33218170	.22371481	1.12282090	.99999993
	.11890043J	.13503893J	-.12828472J	-.07120515J	-.00000001
	.13556039M	.35858079M	.25788618M	1.12507630M	
55.00	.04775266	.37591336	.21389372	1.05529920	.99999984
	.14895146J	.18920980J	-.14049373J	-.04656857J	.00000001
	.15641884M	.42084580M	.25590820M	1.05632610M	
60.00	.02704268	.39021421	.20420596	.98293995	.99999990
	.17405511J	.25956754J	-.14391971J	-.00665221J	.00000000
	.17614337M	.46866025M	.24982585M	.98296246M	
65.00	.00321285	.36489474	.19524848	.90358558	1.00000010
	.19102422J	.34613989J	-.13848958J	.04621829J	-.00000001
	.19105123M	.50295227M	.23937696M	.90476683M	
70.00	-.02307158	.28432101	.18615924	.81048247	1.00000000
	.19601216J	.44405682J	-.12366408J	.10854799J	.00000005
	.19736530M	.52728065M	.22349064M	.81771907M	

75.00	-.04949195	.12397757	.17360734	.69044339	1.00000000
	.18385771J	.53732578J	-.09824962J	.17326172J	-.00000007
	.19040249M	.55144303M	.19948056M	.71185089M	
80.00	-.06921285	-.15029787	.14958121	.52194537	1.00000000
	.14763830J	.58215982J	-.06148319J	.22147751J	-.00000009
	.16305669M	.60124829M	.16172421M	.56699140M	
85.00	-.06436263	-.56018894	.09803492	.28193785	.99999983
	.08167400J	.46972219J	-.01887867J	.20115573J	.00000000
	.10398648M	.73106127M	.09983611M	.34634169M	
90.00	.00000007	-1.00000020	-.00000009	-.00000024	.99999990
	-.00000004J	-.00000051J	-.00000000J	-.00000023J	-.00000008
	.00000008M	1.00000010M	.00000009M	.00000033M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.400	.400	.700

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.22699392	.00000000	1.22699390	1.00000000
5.00	.03426929	-.21939887	.00537600	1.22688770	.99999989
10.00	.06788714	-.19703508	.00993278	1.22659960	.99999992
15.00	.10111510	-.16128398	.01173280	1.22624470	.99999974
20.00	.13957438	-.11535860	.00206228	1.22611470	.999999=6
	IMAGINARY				
25.00	.23402077	-.06908990	-.08421184	1.22477850	.99999990
	-.15632334J	.02864700J	.20359542J	.00205098J	.00000000
	.28142975M	.07479348M	.22032414M	1.22478020M	
			IMAGINARY		
30.00	.07465813	.01353157	.14686103	1.24030110	.99999980
	-.04151919J	.01713883J	.04747068J	-.01496879J	.00000000
	.08542646M	.02183673M	.15434256M	1.24039130M	
35.00	.08238038	.08632998	.14739805	1.22663200	1.00000000
	-.00826335J	.02595636J	.00253562J	-.03463774J	.00000000
	.08279378M	.09014765M	.14741985M	1.22712090M	
40.00	.08063967	.16131940	.14955005	1.20311730	.99999986
	.01798665J	.03671057J	-.02847878J	-.04923255J	-.00000000
	.08262128M	.16544369M	.15223750M	1.20412410M	
45.00	.07446920	.23275611	.14825851	1.17016320	1.00000000
	.04414562J	.05084427J	-.05399744J	-.05660575J	.00000002
	.08657077M	.23824472M	.15778564M	1.17153150M	
50.00	.06541941	.29552577	.14359542	1.12941270	.99999987
	.07061318J	.07082959J	-.07469639J	-.05408216J	.00000000
	.09625965M	.30389523M	.16186165M	1.13070670M	
55.00	.05426316	.34474622	.13668835	1.08276990	1.00000010
	.09629021J	.09966633J	-.09030498J	-.04001736J	-.00000001
	.11052735M	.35886394M	.16382519M	1.08350910M	

60.00	.04128692	.37513971	.12886971	1.03120720	.99999986
	.11950435J	.14032924J	-.10058582J	-.01387852J	.00000001
	.12643535M	.40052726M	.16347754M	1.03130050M	
65.00	.02645599	.37954426	.12124094	.97351611	1.00000000
	.13826004J	.19527313J	-.10532511J	.02415076J	.00000002
	.14076845M	.42683186M	.16060119M	.97381562M	
70.00	.00962314	.34601210	.11435879	.90463330	1.00000000
	.15007827J	.26566994J	-.10396980J	.07345638J	-.00000006
	.15038647M	.43623947M	.15455630M	.90761073M	
75.00	-.00908585	.25196347	.10771482	.81233852	.99999990
	.15129768J	.34876836J	-.09504279J	.13216611J	-.00000014
	.15157024M	.43026150M	.14365101M	.82301989M	
80.00	-.02800072	.05190323	.09810262	.66962260	.99999990
	.13536977J	.42692037J	-.07537433J	.19171174J	.00000003
	.13823536M	.43006387M	.12371505M	.69652553M	
85.00	-.03828978	-.34240770	.07395128	.41990692	1.00000000
	.08962260J	.42010557J	-.04046757J	.21045053J	.00000004
	.09745931M	.54197022M	.08429956M	.46969270M	
90.00	.00000006	-1.00000050	-.00000009	-.00000039	.99999990
	-.00000007J	-.00000064J	.00000001J	-.00000034J	-.00000007
	.00000010M	1.00000040M	.00000009M	.00000052M	

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AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.400	.400	.800

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.28205132	.00000000	1.28205130	1.00000000
5.00	.04087573	-.27140150	.02553906	1.28149340	.99999985
10.00	.07973728	-.24017174	.05083965	1.27987460	1.00000000
15.00	.11520447	-.19063894	.07490516	1.27748800	.99999988
20.00	.14955520	-.12743064	.09214157	1.27587290	.99999985
	IMAGINARY				
25.00	.22028417	-.06376145	.05326039	1.28839670	.99999996
	-.08287540J	.02003537J	.10904732J	-.02609898J	.00000001
	.23535812M	.06683516M	.12135892M	1.28866100M	
30.00	.05489435	.04365698	.29887405	1.22944260	1.00000000
	-.08814969J	.01078376J	.10541807J	-.02874060J	.00000001
	.10384487M	.04496911M	.31692058M	1.22977840M	
35.00	-.00818472	.08171582	.39124343	1.22889690	.99999990
	.05696293J	.00488659J	-.06306177J	.01529540J	-.00000000
	.05754794M	.08186179M	.39629307M	1.22899200M	
			IMAGINARY		
40.00	.06313493	.15827447	.31132180	1.21754110	.99999992
	.11097427J	.07926957J	-.13320596J	-.03673684J	-.00000001
	.12767657M	.17701545M	.33862234M	1.21809510M	
45.00	.06271479	.23411571	.29557104	1.16070830	1.00000000
	.13669678J	.12904054J	-.15288380J	-.04585233J	.00000001
	.15039666M	.26732307M	.33276972M	1.16161360M	
50.00	.04988602	.29033258	.28425982	1.09368210	.99999988
	.16422040J	.18753518J	-.16585387J	-.03583467J	-.00000003
	.17163028M	.34563340M	.32910659M	1.09426890M	
55.00	.03032487	.31974458	.27336665	1.01917850	.99999985
	.18920101J	.25854636J	-.16987072J	-.00885651J	-.00000008
	.19161581M	.41119681M	.32184682M	1.01921690M	

60.00	.00603130	.31361455	.26252671	.93778517	.99999990
	.20788404J	.34256374J	-.16416327J	.03261259J	-.00000006
	.20797151M	.46443944M	.30962857M	.93835207M	
65.00	-.02151439	.26093814	.25098832	.84685660	1.00000000
	.21642736J	.43585106J	-.14844791J	.08484059J	-.00000002
	.21749407M	.50799100M	.29160233M	.85109577M	
70.00	-.04999780	.14739402	.23633084	.73991739	1.00000010
	.21063167J	.52746569J	-.12253882J	.14203568J	-.00000006
	.21648436M	.54767238M	.26621049M	.75342675M	
75.00	-.07473488	-.04405266	.21342789	.60654163	1.00000000
	.18592597J	.59315681J	-.08678581J	.19361528J	-.00000015
	.20038405M	.59479040M	.23039800M	.63669429M	
80.00	-.08632422	-.32591146	.17336039	.43447471	.99999990
	.13853633J	.58457223J	-.04425505J	.21803731J	-.00000008
	.16323046M	.66928541M	.17891991M	.48611575M	
85.00	-.06815540	-.67989888	.10413408	.22040698	.99999997
	.07032241J	.41857040J	-.00625208J	.17361629J	.00000005
	.09793059M	.79841322M	.10432159M	.28057414M	
90.00	.00000009	-1.00000010	-.00000008	-.00000008	.99999980
	-.00000005J	-.00000050J	-.00000002J	-.00000025J	.00000015
	.00000010M	1.00000000M	.00000008M	.00000026M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.400	.400	.800

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.21951222	.00000000	1.21951220	1.00000000
5.00	.03224196	-.21123648	.01546860	1.21911940	1.00000000
10.00	.06298993	-.18690684	.03084144	1.21797210	.99999999
15.00	.09121561	-.14809559	.04548876	1.21623100	.99999991
20.00	.11879412	-.09797072	.05527220	1.21467530	.99999998
	IMAGINARY				
25.00	.17451295	-.04444799·	.02391697	1.21882820	.99999995
	-.08089191J	.01338198J	.10116963J	-.01283892J	.00000000
	.19234934M	.04641876M	.10395823M	1.21889580M	
30.00	.00624898	.02717008	.25487825	1.20006460	.99999993
	-.02463058J	.00064571J	.02892080J	-.00260650J	.00000000
	.02541093M	.02717775M	.25651380M	1.20006730M	
			IMAGINARY		
35.00	.06964575	.08822711	.19282887	1.19466080	1.00000000
	.04666181J	.03030005J	-.05836166J	-.02797838J	-.00000000
	.08383230M	.09328514M	.20146725M	1.19498830M	
40.00	.07419312	.15937673	.18852339	1.16391720	.99999996
	.06954398J	.05311780J	-.08112707J	-.03892165J	.00000000
	.10169063M	.16799536M	.20523808M	1.16456770M	
45.00	.06929598	.22424927	.18604615	1.12337150	1.00000000
	.09440794J	.08120059J	-.10080324J	-.04071590J	-.00000001
	.11711017M	.23849794M	.21159977M	1.12410900M	
50.00	.05937166	.27717020	.18195465	1.07461300	.99999984
	.11967794J	.11754118J	-.11592961J	-.03165500J	-.00000002
	.13359567M	.30106352M	.21574792M	1.07507910M	
55.00	.04581439	.31214470	.17650530	1.01911880	1.00000010
	.14339076J	.16464550J	-.12547916J	-.01077935J	-.00000006
	.15053195M	.35290572M	.21656209M	1.01917570M	

60.00	.02920867	.32224972	.17047980	.95706566	.99999985
	.16325752J	.22417865J	-.12879913J	.02170651J	-.00000003
	.16584982M	.39255692M	.21366463M	.95731178M	
65.00	.00991056	.29823672	.16427249	.88620006	1.00000000
	.17664972J	.29601832J	-.12532820J	.06457975J	-.00000004
	.17692750M	.42020468M	.20662189M	.88854999M	
70.00	-.01145967	.22626266	.15729339	.80052115	1.00000000
	.18034018J	.37633743J	-.11423627J	.11529401J	-.00000001
	.18070391M	.43911803M	.19439942M	.80878106M	
75.00	-.03316341	.08465571	.14709988	.68829618	1.00000000
	.16995164J	.45274937J	-.09420269J	.16798063J	.00000002
	.17315707M	.46059589M	.17467833M	.70849779M	
80.00	-.05027669	-.15872480	.12756355	.52949959	1.00000010
	.13930325J	.49128252J	-.06393512J	.20677068J	.00000012
	.14809841M	.51628680M	.14268902M	.56843990M	
85.00	-.04946121	-.53618317	.08546582	.29805133	.99999991
	.08140899J	.40401680J	-.02583494J	.18708438J	-.00000006
	.09525668M	.67135829M	.08928522M	.35190220M	
90.00	.00000007	-1.00000020	-.00000008	-.00000021	.99999980
	-.00000007J	-.00000054J	.00000000J	-.00000027J	.00000006
	.00000010M	1.00000010M	.00000008M	.00000034M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.400	.400	.800

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.16279071	.00000000	1.16279070	1.00000000
5.00	.02446514	-.15696742	.00630065	1.16258030	.99999987
10.00	.04817560	-.13979564	.01231586	1.16196340	.99999977
15.00	.07086433	-.11222193	.01721197	1.16100780	.99999971
20.00	.09528768	-.07620426	.01662404	1.15998810	.99999981
	IMAGINARY				
25.00	.14459585	-.03577793	-.01721220	1.15953330	.99999996
	-.10194314J	.01132109J	.12205371J	-.00224573J	.00000000
	.17691908M	.03752636M	.12326138M	1.15953540M	
			IMAGINARY		
30.00	.05661855	.01731144	.10505926	1.16029910	.99999996
	-.01144731J	.00861154J	.01161232J	-.00971741J	.00000000
	.05776419M	.01933506M	.10569907M	1.16033970M	
35.00	.06405045	.07149670	.10578683	1.14931530	1.00000000
	.01048537J	.01570487J	-.01413557J	-.01868988J	-.00000000
	.06490303M	.07320123M	.10672706M	1.14946720M	
40.00	.06441054	.12689962	.10817536	1.13223650	.99999993
	.02925203J	.02456269J	-.03363811J	-.02504140J	-.00000000
	.07074178M	.12925493M	.11328473M	1.13251330M	
45.00	.06132609	.17978824	.10851104	1.10888100	1.00000000
	.04814140J	.03626144J	-.05056461J	-.02732799J	.00000000
	.07796463M	.18340856M	.11971393M	1.10921760M	
50.00	.05581103	.22638569	.10656655	1.07954620	.99999990
	.06719554J	.05217898J	-.06502753J	-.02384232J	-.00000000
	.08735051M	.23232117M	.12483993M	1.07980940M	
55.00	.04842061	.26264113	.10281054	1.04457180	.99999993
	.08563926J	.07396039J	-.07662698J	-.01326680J	.00000000
	.09838007M	.27285619M	.12822519M	1.04465600M	

60.00	.03947074	.28378005	.09792215	1.00366110	.99999994
	.10230660J	.10329175J	-.08492143J	.00518463J	-.00000000
	.10965664M	.30199387M	.12961635M	1.00367440M	
65.00	.02910869	.28323162	.09253873	.95492630	.99999995
	.11573474J	.14158044J	-.08943812J	.03180418J	-.00000004
	.11933920M	.31664675M	.12869574M	.95545577M	
70.00	.01740162	.25040290	.08702350	.89334626	1.00000000
	.12403608J	.18933189J	-.08946954J	.06634402J	-.00000007
	.12525080M	.31392383M	.12481141M	.89580637M	
75.00	.00452995	.16601698	.08106748	.80771815	.99999990
	.12442266J	.24423565J	-.08367431J	.10723093J	-.00000007
	.12450509M	.29531794M	.11650462M	.81480493M	
80.00	-.00857148	-.00812967	.07259464	.67375646	1.00000000
	.11199657J	.29407502J	-.06941957J	.14768670J	-.00000005
	.11232409M	.29418736M	.10044430M	.68975294M	
85.00	-.01742054	-.35110948	.05411804	.43825470	1.00000000
	.07687303J	.28739217J	-.04213478J	.15805431J	.00000009
	.07882219M	.45373133M	.06858646M	.46588447M	
90.00	.00000005	-1.00000060	-.00000007	-.00000040	.99999990
	-.00000010J	-.00000059J	.00000004J	-.00000036J	.00000025
	.00000011M	1.00000050M	.00000008M	.00000054M	

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AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.400	.400	.900

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.22699386	.00000000	1.22699380	.99999990
5.00	.03251856	-.21777604	.02542239	1.22616740	1.00000000
10.00	.06291080	-.19074508	.05103316	1.22368260	1.00000000
15.00	.08936431	-.14784006	.07667159	1.21959110	.99999981
20.00	.11215639	-.09273999	.09969329	1.21458880	.99999977
	IMAGINARY				
25.00	.15185699	-.03330904	.09382345	1.21612020	.99999998
	-.05934342J	.00961457J	.07271873J	-.01826887J	.00000000
	.16304044M	.03466889M	.11870490M	1.21625730M	
30.00	.02437738	.04202754	.27264489	1.16704470	.99999992
	-.03932140J	.00214042J	.04429848J	-.01284688J	-.00000000
	.04626477M	.04208201M	.27622018M	1.16711530M	
35.00	-.01355497	.07125935	.32973949	1.16396610	.99999991
	.08858373J	.01184968J	-.09292512J	.02550711J	.00000000
	.08961481M	.07223787M	.34258312M	1.16424550M	
			IMAGINARY		
40.00	.05449787	.14275225	.25926579	1.15138390	1.00000000
	.12642382J	.07677923J	-.13536577J	-.01002777J	-.00000000
	.13766989M	.16209026M	.29247673M	1.15142750M	
45.00	.05523049	.20619813	.24888492	1.10336470	1.00000010
	.14596274J	.12202621J	-.14637662J	-.01259385J	-.00000000
	.15606257M	.23959980M	.28873832M	1.10343650M	
50.00	.04484480	.25220388	.24228412	1.04619140	.99999987
	.16798653J	.17584591J	-.15443808J	-.00079602J	-.00000004
	.17386928M	.30745500M	.28731988M	1.04619160M	
55.00	.02824660	.27464472	.23570581	.98109771	.99999990
	.18810513J	.24059596J	-.15648570J	.02397392J	-.00000006
	.19021411M	.36512481M	.28292225M	.98139057M	

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60.00	.00725557	.26551745	.22855342	.90785661	.99999990
	.20292339J	.31615747J	-.15120049J	.06018556J	-.00000006
	.20305305M	.41286203M	.27404060M	.90984939M	
65.00	-.01673276	.21465274	.22009662	.82379133	.99999990
	.20902193J	.39901264J	-.13782305J	.10507310J	-.00000005
	.20969061M	.45308595M	.25968772M	.83046523M	
70.00	-.04165643	.10885315	.20834239	.72303703	1.00000000
	.20263135J	.47963090J	-.11578958J	.15374597J	.00000002
	.20686885M	.49182801M	.23835640M	.73920252M	
75.00	-.06353152	-.06791762	.18907365	.59615596	1.00000000
	.17954270J	.53719974J	-.08501207J	.19676072J	-.00000020
	.19045166M	.54147609M	.20730628M	.62778715M	
80.00	-.07443969	-.32946623	.15475241	.43152714	.99999990
	.13586316J	.53001807J	-.04748839J	.21467602J	-.00000007
	.15491954M	.62407303M	.16187481M	.48197661M	
85.00	-.05993368	-.66719039	.09445215	.22377904	.99999999
	.07157058J	.38361940J	-.01169000J	.16915630J	.00000000
	.09335092M	.76961474M	.09517281M	.28051900M	
90.00	.00000006	-1.00000020	-.00000008	-.00000017	1.00000000
	-.00000004J	-.00000040J	-.00000000J	-.00000019J	-.00000001
	.00000008M	1.00000010M	.00000008M	.00000025M	

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AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.400	.400	.900

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.16279071	.00000000	1.16279070	1.00000000
5.00	.02355333	-.15606725	.01576040	1.16221650	.99999990
10.00	.04550391	-.13630217	.03184981	1.16048410	.99999983
15.00	.06435720	-.10475542	.04849127	1.15759210	.99999975
20.00	.07968263	-.06378828	.06469978	1.15378250	.99999987
	IMAGINARY				
25.00	.10022759	-.01767233	.06930034	1.15126710	.99999980
	-.04830900J	.00447750J	.05610901J	-.00807579J	.00000000
	.11126243M	.01823072M	.08916703M	1.15129540M	
30.00	-.00639094	.02718661	.20953786	1.13468720	.99999976
	.02518830J	.00067529J	-.02770780J	.00340031J	-.00000000
	.02598644M	.02719499M	.21136186M	1.13469220M	
		IMAGINARY			
35.00	.05725072	.08145303	.15018129	1.12735630	.99999990
	.06656279J	.02675253J	-.07270055J	-.01137789J	.00000000
	.08779664M	.08573386M	.16685260M	1.12741360M	
40.00	.06221153	.13764139	.14804146	1.10188050	.99999987
	.08192899J	.04624977J	-.08487133J	-.01554950J	.00000000
	.10287193M	.14520397M	.17064412M	1.10199010M	
45.00	.05940312	.18823515	.14763625	1.06893270	1.00000010
	.10048118J	.07079551J	-.09740509J	-.01332727J	-.00000001
	.11672702M	.20110812M	.17687344M	1.06901570M	
50.00	.05229478	.22886285	.14608660	1.02896620	.99999991
	.11974672J	.10226717J	-.10776495J	-.00355708J	-.00000000
	.13066759M	.25067265M	.18153396M	1.02897230M	
55.00	.04199574	.25439265	.14330514	.98227497	.99999995
	.13788479J	.14219448J	-.11465994J	.01463493J	-.00000000
	.14413832M	.29143591M	.18353001M	.98238398M	

60.00	.02904587	.25861433	.13967490	.92821391	.99999985
	.15297761J	.19150641J	-.11721099J	.04139125J	-.00000003
	.15571066M	.32180128M	.18233895M	.92913631M	
65.00	.01383673	.23319886	.13538767	.86427910	1.00000000
	.16284476J	.24979824J	-.11463869J	.07600861J	.00000001
	.16343154M	.34173214M	.17740307M	.86761492M	
70.00	-.00305767	.16586770	.12996894	.78487171	1.00000000
	.16479282J	.31380127J	-.10598682J	.11649640J	.00000009
	.16482118M	.35494130M	.16770548M	.79347023M	
75.00	-.02029688	.03752502	.12158190	.67937875	.99999990
	.15515226J	.37364348J	-.08990962J	.15787292J	-.00000010
	.15647423M	.37552306M	.15121474M	.69748070M	
80.00	-.03434553	-.18115647	.10559232	.52937788	.99999990
	.12859437J	.40300454J	-.06485212J	.18684267J	.00000009
	.13310194M	.44184875M	.12391745M	.56138322M	
85.00	-.03566468	-.52726230	.07160726	.30771064	.99999993
	.07799136J	.33340780J	-.03108145J	.16651030J	.00000000
	.08575909M	.62383194M	.07806188M	.34987356M	
90.00	.00000006	-1.00000030	-.00000007	-.00000024	.99999990
	-.00000007J	-.00000047J	.00000001J	-.00000026J	.00000008
	.00000009M	1.00000020M	.00000008M	.00000035M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.400	.400	.900

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.10497241	.00000000	1.10497240	1.00000000
5.00	.01552639	-.10079566	.00701925	1.10467370	.99999985
10.00	.03018967	-.08847485	.01418650	1.10377320	.99999992
15.00	.04321640	-.06865884	.02156589	1.10226960	.99999979
20.00	.05464329	-.04255597	.02834887	1.10025850	.99999989

IMAGINARY

25.00	.06412643	-.01198695	.03438120	1.09812240	1.00000000
	-.04713458J	.00229091J	.05231800J	-.00229916J	.00000000
	.07958560M	.01220390M	.06260384M	1.09812470M	

IMAGINARY

30.00	.04094126	.02157581	.07203950	1.09390660	1.00000000
	.01519647J	.00481334J	-.01678831J	-.00454848J	-.00000000
	.04367058M	.02210620M	.07396983M	1.09391590M	
35.00	.04723345	.05937152	.07281430	1.08464430	1.00000000
	.02636737J	.01002337J	-.02803433J	-.00772245J	.00000000
	.05409470M	.06021167M	.07802465M	1.08467170M	
40.00	.04854038	.09743782	.07489876	1.07146090	.99999990
	.03825173J	.01668714J	-.03889348J	-.00940293J	.00000000
	.06180100M	.09885641M	.08439507M	1.07150210M	
45.00	.04736712	.13329750	.07574971	1.05394760	1.00000000
	.05078166J	.02549794J	-.04918617J	-.00874688J	-.00000000
	.06944365M	.13571429M	.09031776M	1.05398380M	
50.00	.04434913	.16410681	.07509975	1.03175720	.99999979
	.06351514J	.03718167J	-.05847495J	-.00479064J	-.00000001
	.07746624M	.16826622M	.09518032M	1.03176820M	
55.00	.03984500	.18651217	.07310974	1.00434800	.99999986
	.07578298J	.05255518J	-.06627834J	.00329388J	-.00000000
	.08561941M	.19377522M	.09868056M	1.00435330M	

60.00	.03410481	.19624179	.07008547	.97052579	.99999979
	.08672475J	.07242633J	-.07211174J	.01609409J	-.00000000
	.09318970M	.20918033M	.10055882M	.97065921M	
65.00	.02730767	.18721159	.06633910	.92767496	1.00000000
	.09526120J	.09738278J	-.07543788J	.03387857J	.00000003
	.09909796M	.21102508M	.10045770M	.92829336M	
70.00	.01959654	.14969095	.06203955	.87037345	.99999990
	.09996293J	.12730451J	-.07552360J	.05640088J	.00000003
	.10186566M	.19650399M	.09773802M	.87219894M	
75.00	.01116412	.06649670	.05693911	.78763592	.99999990
	.09870542J	.15997718J	-.07116092J	.08215408J	-.00000005
	.09933478M	.17324695M	.09113693M	.79190885M	
80.00	.00253929	-.09528267	.04967957	.65688276	1.00000000
	.08784209J	.18658264J	-.06015740J	.10559114J	.00000005
	.08787879M	.20950386M	.07801905M	.66531529M	
85.00	-.00424584	-.40319214	.03570327	.42977889	.99999994
	.06018008J	.17518249J	-.03848863J	.10624394J	-.00000001
	.06032967M	.43960527M	.05249855M	.44271622M	
90.00	.00000002	-1.00000060	-.00000005	-.00000043	.99999990
	-.00000009J	-.00000039J	.00000005J	-.00000025J	.00000027
	.00000009M	1.00000050M	.00000007M	.00000050M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.700	.400	.400	1.000

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.17647061	.00000000	1.17647060	1.00000000
5.00	.02477649	-.16861419	.02523767	1.17541770	.99999991
10.00	.04731995	-.14559500	.05102037	1.17220130	.99999993
15.00	.06541089	-.10911177	.07788664	1.16665990	.99999974
20.00	.07743291	-.06225034	.10567137	1.15872880	.99999981
	IMAGINARY				
25.00	.08834408	-.01020717	.12696261	1.15051160	.99999998
	-.03567341J	.00328317J	.04092976J	-.01072540J	.00000000
	.09527470M	.01072220M	.13339696M	1.15056150M	
30.00	-.00288992	.04162429	.24994261	1.11098990	.99999996
	.00466665J	.00003012J	-.00497441J	.00152089J	-.00000000
	.00548901M	.04162430M	.24999210M	1.11099090M	
35.00	-.01909714	.06481165	.27951217	1.10729540	1.00000000
	.11710545J	.02077303J	-.11696094J	.03546918J	-.00000001
	.11865237M	.06805930M	.30299655M	1.10786330M	
			IMAGINARY		
40.00	.04605926	.13069307	.21656807	1.09415540	.99999992
	.14012867J	.07653957J	-.13823838J	.01079501J	.00000000
	.14750423M	.15145621M	.25692718M	1.09420860M	
45.00	.04756153	.18291111	.20974026	1.05240750	.99999998
	.15397925J	.11708806J	-.14261191J	.01265768J	-.00000002
	.16115740M	.21717754M	.25363188M	1.05248350M	
50.00	.03920721	.21937419	.20617559	1.00246970	.99999993
	.17106400J	.16590565J	-.14669959J	.02565736J	-.00000005
	.17549956M	.27504494M	.25303980M	1.00279790M	
55.00	.02524158	.23486557	.20247604	.94461871	.99999988
	.18682782J	.22427136J	-.14690848J	.04869367J	-.00000008
	.18852525M	.32474523M	.25015724M	.94587291M	

60.00	.00728931	.22213604	.19792196	.87802742	.99999990
	.19812391J	.29161007J	-.14162851J	.08068870J	-.00000012
	.19825795M	.36657993M	.24337571M	.88172717M	
65.00	-.01336841	.17186870	.19178760	.79993351	1.00000000
	.20188533J	.36456868J	-.12984073J	.11945608J	-.00000001
	.20232745M	.40304983M	.23160548M	.80880366M	
70.00	-.03490529	.07195588	.18238470	.70489480	1.00000000
	.19473456J	.43475548J	-.11074999J	.16077152J	-.00000000
	.19783813M	.44066991M	.21337698M	.72299665M	
75.00	-.05393042	-.09259393	.16621274	.58426682	.99999990
	.17283074J	.48424584J	-.08394854J	.19619917J	-.00000014
	.18104959M	.49301892M	.18620964M	.61632931M	
80.00	-.06379988	-.33626315	.13691818	.42701546	1.00000010
	.13231491J	.47720729J	-.05057947J	.20831435J	-.00000009
	.14689335M	.58378053M	.14596187M	.47511794M	
85.00	-.05213354	-.65807677	.08472644	.22604858	.99999997
	.07181367J	.34791161J	-.01671255J	.16235641J	.00000003
	.08874182M	.74438399M	.08635901M	.27831199M	
90.00	.00000005	-1.00000020	-.00000008	-.00000018	1.00000000
	-.00000005J	-.00000036J	-.00000000J	-.00000017J	-.00000003
	.00000007M	1.00000010M	.00000008M	.00000025M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.800	.400	.400	1.000

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.11111115	.00000000	1.11111110	1.00000000
5.00	.01555524	-.10584780	.01594016	1.11038530	.99999988
10.00	.02940146	-.09039648	.03255908	1.10816070	.99999983
15.00	.03960422	-.06580720	.05078307	1.10428540	.99999983
20.00	.04355908	-.03400383	.07224011	1.09847400	.99999987
	IMAGINARY				
25.00	.03193826	.00171902	.10570054	1.08950780	.99999979
	-.01590275J	.00046041J	.01725735J	-.00274989J	-.00000000
	.03567842M	.00177961M	.10710004M	1.08951120M	
30.00	-.01787278	.02968556	.17269568	1.07759690	1.00000000
	.06967106J	.00517349J	-.07223594J	.01098991J	-.00000000
	.07192700M	.03013300M	.18719462M	1.07765290M	
		IMAGINARY			
35.00	.04574609	.07671622	.11575122	1.06997710	1.00000010
	.08418459J	.02618494J	-.08482482J	.00167280J	.00000000
	.09581101M	.08106189M	.14350468M	1.06997830M	
40.00	.05062334	.11944590	.11485600	1.04812040	.99999992
	.09251265J	.04228731J	-.08888986J	.00151760J	.00000000
	.10545764M	.12671045M	.14523535M	1.04812150M	
45.00	.04924478	.15696868	.11547894	1.02037150	1.00000000
	.10532955J	.06304850J	-.09584638J	.00611850J	.00000000
	.11627279M	.16915756M	.15007303M	1.02038980M	
50.00	.04432713	.18585093	.11529854	.98654696	.99999995
	.11924339J	.08949453J	-.10226825J	.01607937J	.00000001
	.12721587M	.20627612M	.15411861M	.98667798M	
55.00	.03673616	.20169310	.11407888	.94621185	.99999999
	.13240813J	.12246310J	-.10668881J	.03200939J	-.00000003
	.13740982M	.23596041M	.15619376M	.94675311M	

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60.00	.02693314	.19895682	.11195863	.89813656	.99999991
	.14315000J	.16232835J	-.10813752J	.05406575J	-.00000007
	.14566165M	.25677676M	.15565493M	.89976240M	
65.00	.01529236	.17014391	.10897626	.83955596	1.00000000
	.14963390J	.20841663J	-.10575561J	.08172504J	-.00000002
	.15041329M	.26904728M	.15185543M	.84352426M	
70.00	.00232740	.10429593	.10471195	.76507535	1.00000010
	.14960602J	.25779435J	-.09855494J	.11328785J	-.00000005
	.14962411M	.27809273M	.14379732M	.77341736M	
75.00	-.01091497	-.01548313	.09775634	.66491547	.99999990
	.14000130J	.30241704J	-.08521969J	.14442510J	-.00000007
	.14042613M	.30281313M	.12968693M	.68041986M	
80.00	-.02190245	-.21556898	.08463824	.52215917	1.00000000
	.11631810J	.32188284J	-.06409291J	.16400999J	-.00000003
	.11836222M	.38739971M	.10616748M	.54731112M	
85.00	-.02405107	-.53375810	.05751101	.31000771	1.00000000
	.07197451J	.26440453J	-.03411796J	.14234660J	-.00000007
	.07588665M	.59565716M	.06686966M	.34112656M	
90.00	.00000003	-1.00000030	-.00000006	-.00000028	.99999980
	-.00000006J	-.00000035J	.00000002J	-.00000020J	.00000000
	.00000007M	1.00000020M	.00000006M	.00000034M	

AMPLITUDE RATIOS FOR AN INCIDENT SV WAVE

VELOCITY RATIO (TRANS/INC)	POISSONS RATIO (TRANS)	POISSONS RATIO (INC)	DENSITY RATIO (TRANS/INC)
.900	.400	.400	1.000

ANGLE	RP	RS	TP	TS	ENERGY
.00	.00000000	-.05263160	.00000000	1.05263160	1.00000000
5.00	.00734501	-.04998781	.00757655	1.05225810	.99999982
10.00	.01371702	-.04220386	.01565482	1.05111350	.99999980
15.00	.01786230	-.02973793	.02503260	1.04911690	.99999982
20.00	.01725995	-.01344018	.03781846	1.04608990	1.00000000
	IMAGINARY				
25.00	-.00834052	.00472418	.07434848	1.04089470	1.00000000
	.00633027J	.00003965J	-.00655888J	.00043940J	.00000000
	.01047075M	.00472434M	.07463723M	1.04089470M	
			IMAGINARY		
30.00	.02700021	.02612170	.04553912	1.03766910	1.00000000
	.03916675J	.00441776J	-.03971409J	.00041176J	-.00000000
	.04757148M	.02649264M	.06042368M	1.03766910M	
35.00	.03169701	.04917382	.04618965	1.02960250	.99999992
	.04013073J	.00771679J	-.03964024J	-.00007329J	-.00000000
	.05113879M	.04977563M	.06086733M	1.02960240M	
40.00	.03317369	.07163743	.04772362	1.01881840	.99999987
	.04562606J	.01224626J	-.04377548J	.00052106J	.00000000
	.05641127M	.07267663M	.06475984M	1.01881840M	
45.00	.03303453	.09182208	.04854094	1.00479880	.99999997
	.05248176J	.01825252J	-.04880669J	.00247936J	.00000000
	.06201303M	.09361863M	.06883543M	1.00480180M	
50.00	.03164705	.10754023	.04842656	.98686259	.99999993
	.05973761J	.02604927J	-.05378489J	.00623728J	.00000000
	.06760265M	.11065019M	.07237366M	.98688229M	
55.00	.02921421	.11599109	.04741081	.96395637	.99999991
	.06672272J	.03597214J	-.05814610J	.01220083J	-.00000000
	.07283812M	.12144104M	.07502502M	.96403357M	

60.00	.02589354	.11335802	.04560711	.93427569	.99999984
	.07276172J	.04831296J	-.06141117J	.02066877J	.00000000
	.07723175M	.12322411M	.07649406M	.93450428M	
65.00	.02182026	.09399904	.04313887	.89458542	.99999998
	.07705473J	.06317666J	-.06306401J	.03173653J	.00000002
	.08008467M	.11325683M	.07640701M	.89514818M	
70.00	.01711881	.04886325	.04005367	.83895831	.99999990
	.07854042J	.08013564J	-.06242422J	.04508127J	-.00000000
	.08038440M	.09385808M	.07416927M	.84016865M	
75.00	.01193073	-.03765503	.03615914	.75631606	.99999990
	.07563965J	.09731235J	-.05844013J	.05935599J	-.00000001
	.07657479M	.10434363M	.06872214M	.75864162M	
80.00	.00651091	-.19418580	.03063313	.62536257	.99999989
	.06571756J	.10875115J	-.04931446J	.07035887J	.00000004
	.06603930M	.22256445M	.05805432M	.62930812M	
85.00	.00159756	-.47644020	.02099072	.40343363	1.00000000
	.04387804J	.09621426J	-.03180777J	.06509384J	-.00000001
	.04390711M	.48605806M	.03810964M	.40865130M	
90.00	.00000000	-1.00000040	-.00000002	-.00000043	.99999970
	-.00000004J	-.00000012J	.00000002J	-.00000008J	-.00000003
	.00000004M	1.00000030M	.00000003M	.00000044M	

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TABLES OF AMPLITUDE AND ENERGY RATIOS FOR
PLANE SV WAVES, by John K. Costain, Kenneth L.
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Dec. 63. 168 p. incl. illus., tables, 6 refs.
(Rept. No. 4410-68-X)
(Contract SD-78)   Unclassified report

This report presents tabulations of energy ratios calcu-
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SV wave incident on a plane elastic discontinuity. All
computations were programmed in FORTRAN for an
IBM 1620 digital computer. Incident angles were varied
from 0° to 90° in increments of 2° except near the crit-
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varying parameters were the velocity ratio and density ratio across each interface, and the angle of incidence. Energy ratios were computed for a Poisson's ratio of 0.25 only, and amplitude ratios were computed for Poisson's ratios of both 0.25 and 0.40. Compressional velocity ratios (transmitted/incident) of 0.7, 0.8, and 0.9, and density ratios (transmitted/incident) of 0.7, 0.8, 0.9, and 1.0 were used. The data are presented in 36 tables, 12 for energy ratios and 24 for amplitude ratios.

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