

My best guess is that this somehow refers to the results that iterated MIVQUE (with the variance component estimates of each iteration taken as prior values for the next) *converges* to the REML estimates.

On the positive side is that many methods – including those of the last chapters – are illustrated by explicit implementations for the one-way, two-way, one-way with one covariate etc.

situations, and also by small illustrative data examples.

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4. WAVELETS: AN ELEMENTARY TREATMENT OF THEORY AND APPLICATIONS. Tom H. Koornwinder (ed.), World Scientific, London, 1995. No. of pages: vii + 240. Price: £49. ISBN 9-8102-1388-3

None of the chapters in this book addresses statistical issues or medical applications, so the book will be of limited interest to readers of *Statistics in Medicine*. The editor states in the preface that the ‘mathematical prerequisites are not very high’ and that ‘some familiarity with Hilbert space theory and Fourier analysis is helpful’. Chapter 2 provides a review of the ‘mathematical preliminaries’. Unfortunately, this chapter is not so much a review as an outline of the definitions and theorems, and the chapter assumes that the reader already is familiar with material that is considered advanced by most statisticians. A much better summary of this material can be found in the ‘Preliminaries and notation’ section of Daubechies.¹

The first chapter is ‘Wavelets: first steps’ by Nico C. Temme. The terminology in this chapter is non-standard. Particularly problematic is the use of ‘frequency’ to mean ‘scale’. Better introductions are Strang,² on which Temme’s chapter is based, and the first chapter of Daubechies.¹ For an introduction to wavelets and their role in statistics, I recommend Ogden,³ which recently was reviewed in this journal.⁴ For a non-mathematical conceptual introduction for users of S-plus, I recommend Bruce and Gao.⁵

Each chapter of *Wavelets: An Elementary Treatment of Theory and Applications* is written by a different author or set of authors. Most books of this type suffer from inconsistency in notation and

mathematical level. The authors of this book have attempted to avoid these problems, and they have achieved partial success.

The only ‘application’ in the sense of data analysis is in the chapter ‘The finite wavelet transform with an application to seismic processing’ by Jos Alkemade. This chapter contains a long mathematical introduction to wavelets that ignores the introductory material in the previous chapters. The latter part of the chapter may be of interest to statisticians working in geophysics.

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REFERENCES

1. Daubechies, I. *Ten Lectures on Wavelets*, Society for Industrial and Applied Mathematics, Philadelphia, 1992.
2. Strang, G. ‘Wavelets and dilation equations: a brief introduction’, *SIAM Review*, **31**, 614–627 (1989).
3. Ogden, T. R. *Essential Wavelets for Statistical Applications and Data Analysis*, Birkhäuser, Boston, 1997.
4. Scheike, T. H. ‘Review of *Essential Wavelets for Statistical Applications and Data Analysis*’, *Statistics in Medicine*, **18**, 627–628 (1999).
5. Bruce, A. and Gao, H. Y. *Applied Wavelet Analysis with S-Plus*, Springer-Verlag, New York, 1996.