$$\rho c^s(r) = \frac{1}{2\pi}\int_0^\infty dq\, qJ_0(qr)\left[\frac{4}{q^2} - \frac{1}{\exp(q^2/4) - 1}\right] \quad (4)$$

[this is equivalent to Eq. (14) of Ref. 3, by an integration by parts]. The asympotic behavior of $c^s(r)$ is governed by the four poles of its Fourier transform [defined by Eq. (4)] which are closest to the real axis, i.e., at $q^2 = \pm 8i\pi$. Keeping only the contributions of these poles gives

$$\rho c^s(r) \underset{r\to\infty}{\sim} -\frac{1}{2\pi}\int_0^\infty dq\, qJ_0(qr)\left[\frac{4}{q^2+8i\pi} - \frac{4}{q^2-8i\pi}\right]$$
$$= -(4/\pi)\mathrm{ker}(8^{1/2}\pi^{1/2}r), \quad (5)$$

where ker is a Bessel function[4] of known asymptotic behavior:

$$\rho c^s(r) \underset{r\to\infty}{\sim} -(2/\pi)^{3/4} r^{-1/2}$$
$$\times \exp(-2\pi^{1/2}r)\cos[2\pi^{1/2}r + (\pi/8)]. \quad (6)$$

Thus, it is seen, on this model, that $c(r)$ behaves asymptotically as $-\beta v(r)$ and that the remainder $c^s(r)$ is indeed short ranged and, more explicitly, has the exponential decay [Eq. (6)].

A second remark is about the asymptotic behavior of the "bridge function" $B(r)$, which is defined by

$$B(r) = \ln[1 + h(r)] - h(r) + c^s(r). \quad (7)$$

Since, here $h(r)$ is the Gaussian $-\exp(-r^2)$, the bridge function $B(r)$ has the same asymptotic behavior [Eq. (6)] as $c^s(r)$. Therefore, $B(r)$ has an exponential decay, which is *slower* than the Gaussian decay of $h(r)$. This is in contradiction with a common belief that $B(r)$ has a faster decay. Of course, our observation might be a pathology of the present model at the special value $\Gamma = 2$.

It is amusing to note that, if we express $B(r)$ as an infinite sum of graphs built with h bonds,[5] since h is a Gaussian, every given graph can be explicitly computed and gives a Gaussian result.[6] For instance,

 $\sim \exp(-r^2)$,

 $\sim \exp[-(7/8)r^2]$,

 $\sim \exp[-(2/3)r^2]$.

Therefore, the exponential decay of $B(r)$ results from the infinite summation of Gaussians of increasing ranges.

[a] Laboratoire associé au CNRS.

[1] B. Jancovici, Phys. Rev. Lett. **46**, 386 (1981).
[2] J. M. Caillol, D. Levesque, J. J. Weis, and J. P. Hansen, J. Stat. Phys. **28**, 325 (1982).
[3] J. A. Hernando, J. Chem. Phys. **84**, 2853 (1986).
[4] I. S. Gradshteyn and I. M. Ryzhik, *Tables of Integrals, Series, and Products* (Academic, New York, 1980).
[5] K. Hiroike and T. Morita, Prog. Theor. Phys. **25**, 537 (1961).
[6] G. E. Uhlenbeck and G. W. Ford, in *Studies in Statistical Mechanics*, edited by J. de Boer and G. E. Uhlenbeck (North-Holland, Amsterdam, 1962), Vol. 1.

ERRATA

Erratum: The thermodynamics of ammonium scheelites. III. An analysis of the heat capacity and related data of deuterated ammonium perrhenate ND_4ReO_4 [J. Chem. Phys. 85, 5963 (1986)]

R. J. C. Brown
Department of Chemistry, Queen's University, Kingston, Ontario K7L 3N6, Canada

J. E. Callanan
Centre for Chemical Engineering, National Bureau of Standards, Boulder, Colorado 80303

R. D. Weir
Department of Chemistry and Chemical Engineering, Royal Military College of Canada, Kingston, Ontario, K7K 5LO, Canada

E. F. Westrum, Jr.
Department of Chemistry, University of Michigan, Ann Arbor, Michigan 48109

Equation (3) contains a misplaced bracket at C_{11} plus an incorrect $2C_{13}\alpha_1\alpha_3$ term. It should read $c_p - c_\epsilon = VT\{2(c_{11} + c_{12})\alpha_1^2 + 4c_{13}\alpha_1\alpha_3 + c_{33}\alpha_3^2\}$.

J. Chem. Phys. **86** (6), 15 March 1987 0021-9606/87/063759-01$02.10