\[ \rho c'(r) = \frac{1}{2\pi} \int_0^\infty dq \, q J_0(qr) \left[ \frac{4}{q^2} \exp(q^2/4) - 1 \right] \]  
\[ (4) \]

[this is equivalent to Eq. (14) of Ref. 3, by an integration by parts]. The asymptotic behavior of \( c'(r) \) 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

\[ \rho c'(r) \sim -\frac{1}{2\pi} \int_0^\infty dq \, q J_0(qr) \left[ \frac{4}{q^2 + 8i\pi} - \frac{4}{q^2 - 8i\pi} \right] \]
\[ = - \left( \frac{4}{\pi} \right) \ker(8^{1/2} \pi^{1/2} r), \]  
\[ (5) \]

where \( \ker \) is a Bessel function of known asymptotic behavior:

\[ \rho c'(r) \sim - \left( \frac{2}{\pi} \right)^{3/4} r^{-1/2} \]
\[ \times \exp(-2\pi^{1/2} r + (\pi/8)). \]  
\[ (6) \]

Thus, it is seen, on this model, that \( c(r) \) behaves asymptotically as \( -\beta_0 r \) and that the remainder \( c'(r) \) 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

\[ B(r) = \ln[1 + h(r)] - h(r) + c'(r). \]  
\[ (7) \]

Since, here \( h(r) \) is the Gaussian \( \exp(-r^2) \), the bridge function \( B(r) \) has the same asymptotic behavior [Eq. (6)] as \( c'(r) \). 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, since \( h \) is a Gaussian, every given graph can be explicitly computed and gives a Gaussian result. 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.

ERRATA

Erratum: The thermodynamics of ammonium scheelites. III. An analysis of the heat capacity and related data of deuterated ammonium perrhenate \( \text{ND}_4\text{ReO}_4 \) [J. Chem. Phys. 85, 5963 (1986)]

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Equation (3) contains a misplaced bracket at \( C_{11} \) plus an incorrect \( 2C_{13}\alpha_3\alpha_3 \) term. It should read

\[ c_p - c_v = VT\{2(c_{11} + c_{12})\alpha_1^2 + 4c_{13}\alpha_3\alpha_3 + c_{33}\alpha_3^2\}. \]