Rejoinder to the Response to the Comment on a recent conjectured solution of the three-dimensional Ising model by Z.-D. Zhang

We add here a few sentences concerning the author's Response [1] to our Comment [2] criticizing his original claims regarding his conjectured solution of the three-dimensional Ising model [3].

First, we stand by our summary in [2] where the main purpose was to refute claims made in [3] on the basis of a putative 4-dimensional integral representation. In summarizing his rebuttal, Dr Zhang now admits that "more research" is needed.

He goes on, however, to assert that "the correct reproduction of the high-temperature expansion cannot be a coincidence." We consider this remark to be quite misleading: indeed, we point out in [2] that the reproduction of the high-T series in [3] is merely a fit of 11 unknown expansion coefficients (for the weights w_y and w_z) to ensure agreement with the 11 exactly known high-T terms. Notably, no *further* high-T series coefficients are proposed in [3]; however, since this fit turns out to play no further role, it remains true that the conjectured solution does *not* reproduce the exact high-T expansion.

We do not find the majority of the issues addressed in the Response to be relevant to our disproof of [3], which also stressed the failure of the conjectured solution to generate the correct low-T expansions. In our view, a refusal to accept the conclusions of the rigorous work (cited in [2]) for the applicability of the long-

known expansions — at high enough and low enough T — to the exact solution for the thermodynamic limit, constitutes a denial of the mathematical basis of statistical mechanics.

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[1] Z.-D. Zhang, Phil. Mag. (2008) p. .

[2] F.Y. Wu, B.M. McCoy, M.E. Fisher and L. Chayes, Phil. Mag. (2008) p. .

[3] Z.-D. Zhang, Phil. Mag. 87 (2007) p.5309.

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5 September 2008