ERRATA

Ising Quantum Chain is Equivalent to a Model of Biological Evolution
[Phys. Rev. Lett. 78, 559 (1997)]

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In the mean-field example, due to a somewhat subtle problem of noncommutativity between taking the thermodynamic limit and changing L_2 norms to L_1 norms, the surplus given in Eq. (22) is not correct. It must read

$$u = \int_0^1 (2x - 1) f(x)\, dx = \begin{cases} 1 - h, & 0 \leq h < 1, \\ 0, & h \geq 1, \end{cases} \qquad (22)$$

which actually makes the phase transition first order in this variable. Figure 2 changes accordingly — see below.

Since the underlying mistake reveals an interesting difference between the quantum-mechanical (L_2) and the classical probabilistic (L_1) pictures, we will give details elsewhere [E. Baake, M. Baake, and H. Wagner (to be published)].
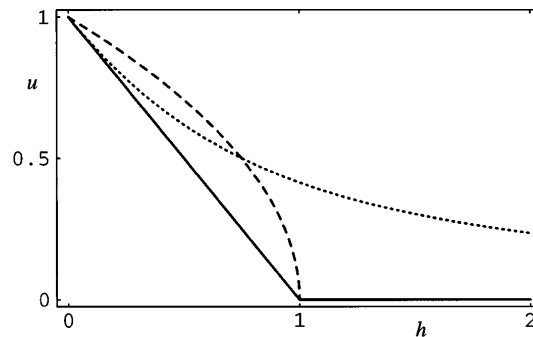

FIG. 2.   Average surplus (u) of sites with value $+1$ as defined in Eq. (22), in the macroscopic limit. Dotted line: Fujiyama landscape (with $\alpha_j \equiv \alpha = 1$); dashed line: Onsager landscape ($\gamma = 1$); solid line: mean-field landscape ($\alpha = 0, \gamma = 2$).