Abstract Submitted
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Chaotic Spin Correlations in Frustrated Ising Hierarchical Lattices NEŞE ARAL, A. NIHAT BERKER, Koç University — Spin-spin correlations are calculated in frustrated hierarchical Ising models that exhibit chaotic renormalization-group behavior. [1] The spin-spin correlations, as a function of distance, behave chaotically. The far correlations, but not the near correlations, are sensitive to small changes in temperature or frustration, with temperature changes having a larger effect. On the other hand, the calculated free energy, internal energy, and entropy are smooth functions of temperature. The recursion-matrix calculation of thermodynamic densities in a chaotic band is demonstrated. The spectrum of Lyapunov exponents is calculated as a function of frustration. [1] N. Aral and A.N. Berker, arXiv:0810.4586v1 [cond-mat.dis-nn] (2008).

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