

Abstract Submitted
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Critical scaling corrections in 2D dimerized antiferromagnets¹

NUSEN MA, Boston University, Sun Yat-sen University, HUI SHAO, Beijing Computational Science Center, Boston University, DAO-XIN YAO, Sun Yat-sen University, ANDERS SANDVIK, Boston University — 2D dimerized antiferromagnets can be driven through a quantum-critical point by tuning the ratio $g = J2/J1$ between inter- and intra-dimer couplings. It has been shown [1] that the systems fall into two classes, depending on whether or not a certain bond-inversion symmetry is present in the dimer pattern. The two classes should have the same leading critical exponents but different exponents controlling the scaling corrections. We here investigate the scaling corrections using quantum Monte Carlo simulations for several different dimerization patterns. We will discuss systematic methods to extract the scaling corrections in the thermodynamic limit.

[1]L. Fritz, R. L. Doretto, S. Wessel, S. Wenzel, S. Burdin, and M. Vojta, Phys. Rev. B 83, 174416 (2011).

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