Abstract Submitted
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p6 - Chiral Resonating Valence Bonds in the Kagome Antiferromagnet[1] ASSA AUERBACH, Technion, SYLVAIN CAPPONI, University of Toulouse, V. RAVI CHANDRA, Institute of Physics, Bhubaneswar, MARVIN WEINSTEIN, SLAC — The Kagome Heisenberg antiferromagnet is mapped onto an effective Hamiltonian on the star superlattice by Contractor Renormalization. Comparison of ground state energies on large lattices to Density Matrix Renormalization Group justifies truncation of effective interactions at range 3. Within our accuracy, magnetic and translational symmetries are not broken (i.e. a spin liquid ground state). However, we discover doublet spectral degeneracies which signal the onset of p6 - chirality symmetry breaking. This is understood by simple mean field analysis. Experimentally, the p6 chiral order parameter should split the optical phonons degeneracy near the zone center. Addition of weak next to nearest neighbor coupling is discussed.

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