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Quantum Antiferromagnet on an Anisotropic Triangular Lattice

SEDIGH GHAMARI, CATHERINE KALLIN, SUNG-SIK LEE, McMaster University — The effects of quantum fluctuations on the spin 1/2 Heisenberg antiferromagnet on a triangular lattice, with diagonal interchain exchange J' weaker than the intrachain exchange J , are studied. This model is of considerable interest because of its relevance to Cs_2CuCl_4 , where experiments have been interpreted as evidence for a nearby two-dimensional spin liquid and because numerous theoretical studies have proposed that the incommensurate spiral spin density wave order is destroyed by quantum fluctuations well before the one-dimensional limit ($J'=0$) is reached.

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