Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Exact Diagonalization Study of the Heisenberg Anisotropic Triangular Model Using Twisted Boundary Conditions MISCHA THESBERG, ERIK S. SORENSEN, McMaster University — The anistropic triangular model, which is believed to describe materials such as Cs_2CuCl_4 and Cs_2CuBr_4, is dominated by incommensurate spiral physics and is thus extremely resistant to numerical analysis on small system sizes. In this talk we will discuss new exact diagonalization work using twisted boundary conditions to study the phase diagram of this model. With these boundary conditions we are able to extract the inter- and intra-chain ordering q-vectors for the $\frac{J'}{J} < 1$ region, as well as identify a phase transitions at $\frac{J'}{J} \sim 0.50/0.88$ (depending on finite system geometry). We also explore the nature of the two phases.

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Date submitted: 08 Nov 2013 Electronic form version 1.4