

Abstract Submitted  
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**Mixed exchange antiferromagnetic/ferromagnetic  $S=1/2$  Heisenberg rectangular lattices** BRIAN KEITH, TOM VALLEAU, FAN XIAO, MARK TURNBULL, CHRIS LANDEE, Clark University, LANDEE/TURNBULL MAGNET LAB TEAM — The susceptibilities of mixed antiferromagnetic/ferromagnetic rectangular Heisenberg lattices of  $S = 1/2$  have been simulated using Quantum Monte Carlo techniques. These simulations include lattices in which the stronger interaction is ferromagnetic or antiferromagnetic along with the isotropically mixed lattice. The two exchange strengths,  $J$  and  $J'$ , are related by  $J' = \alpha J$ , where  $\alpha$  is the aspect ratio which ranges from  $0 \leq \alpha \leq 1$ . These simulations were done for  $0 \leq \alpha \leq 1$  in .05 increments. The results are discussed and the models are used to fit suspected mixed antiferromagnetic/ferromagnetic rectangles such as  $Cu(pyx)(NO_3)(HCO_2)$  and  $Cu(pyx)(N_3)_2$ .

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