Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Spin Bose-Metal phase in a spin-1/2 model with ring exchange on ladders M. BLOCK, Dept. of Physics, Univ. of California, Santa Barbara, D.N. SHENG, Department of Physics and Astronomy, California State Univ., Northridge, OLEXEI I. MOTRUNICH, MATTHEW P.A. FISHER, Dept. of Physics, California Institute of Technology — I will discuss recent developments in the study of a 2D quantum phase of strongly correlated spins, the Spin Bose-Metal (SBM), a spin liquid characterized by gapless excitations residing on surfaces in momentum space (i.e. "Bose surfaces"). Thus far, significant progress has been made by considering a triangular lattice Heisenberg model with a four-site ring exchange term on a 2-leg strip (see [1]), where quasi-1D signatures of the parent 2D phase can be detected (i.e. "Bose points"). The ladder systems have provided a fruitful scaffolding for the implementation of the quasi-exact numerical method DMRG, as well as a theoretical approach via slave particles and Bosonization. To test the theory numerically, variational Monte Carlo (VMC) is employed with Gutzwiller projected products of Slater determinants as a direct comparison with DMRG results. Here, I will present new results for 3- and 4-leg ladders as we continue to drive towards two dimensions where this phase is potentially relevant in the study of organic Mott insulators near the metal-insulator transition. Indeed, we will offer evidence that the phase diagram of the 4-leg triangular ladder contains a Spin Bose-Metal phase. [1] D. N. Sheng *et al.*, Phys. Rev. B **79**, 205112 (2009).

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Date submitted: 18 Dec 2009 Electronic form version 1.4