Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Spin Waves in the Normal State of the Two-Dimensional Hubbard Model[1] JAMES LEBLANC, Memorial University of Newfoundland, XI CHEN, University of Michigan, RYAN LEVY, University of Illinois - Urbana-Champaign, ANDREY ANTIPOV, Microsoft Station Q, ANDREW MILLIS, Columbia University, EMANUEL GULL, University of Michigan — Dynamical mean field theory and dual fermi methods are used to compute the dynamical spin response of the 2D Hubbard model for a variety of interaction strengths both at and away from half-filling. We compute generalized two-particle correlated vertex functions within dynamical mean-field theory and then extend beyond the dynamical mean field approximation using the technique of dual-fermions. A direct comparison to spin-wave theory and to inelastic neutron scattering data for the insulating parent cuprate La_2CuO_4 reveals excellent agreement and demonstrates the power of the method. The evolution of the spin response with electron and hole doping is presented and discussed in terms of the physics of the cuprates.

[1]Support from NSF DMR 1308236

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Date submitted: 10 Nov 2016 Electronic form version 1.4