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Diagrammatic Monte Carlo Dual Fermions study of the 2D Hubbard model SERGEI ISKAKOV, EMANUEL GULL, Univ of Michigan - Ann Arbor — The dual fermion series is a diagrammatic approach for correlated lattice models that includes non-perturbative local and perturbative non-local dynamic correlations. In this talk we show results from a simulation of the 2D Hubbard model solved with dual fermions, where we stochastically sample the dual fermion perturbation series using a diagrammatic Monte Carlo method. We present a description of the method, compare to other methods, and show several applications to correlated systems.

Sergei Iskakov
Univ of Michigan - Ann Arbor

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