

# The Effect of Strong Impurity Scattering on Superconductivity in the 2D Hubbard Model

Alexander Kemper<sup>1</sup>, Thomas Maier<sup>2</sup>, Mark Jarrell<sup>2</sup>, Hai-Ping Cheng<sup>1</sup>

<sup>1</sup>University of Florida, Quantum Theory Project, Gainesville, FL, 32611-8435

<sup>2</sup>University of Cincinnati, Department of Physics, Cincinnati, OH 45221-0011

We study the effect of strong impurity scattering in the two-dimensional Hubbard model to model the effect of Zn substitution in the cuprates, using the dynamical cluster quantum Monte Carlo framework. The superconducting  $T_c$  is strongly suppressed by impurity doping, while the spin susceptibility indicates moment formation. We will discuss the dependence of  $T_c$  on the strength of the impurity scattering potential, and by investigating the properties of sites neighboring the impurity, the relevance to the experimental STM image of Zn impurity in cuprates.