

DAMOP19-2019-020029

Abstract for an Invited Paper  
for the DAMOP19 Meeting of  
the American Physical Society

**Ultracold atom quantum simulations: Exploring low temperature Fermi-Hubbard phases**

MARKUS GREINER, Harvard University

Ultracold-atom model-systems offer a unique way to investigate many-body quantum physics in uncharted regimes. Quantum gas microscopy enables us to zoom in on a single particle level. We can explore many-body quantum physics in regimes that are not computationally accessible. In my talk I will present the realization of an anti-ferromagnetic phase of Fermions in an optical lattice, and results on probing string pattern in the doped Fermi-Hubbard model.