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Disordered Hubbard Model with Ultracold Atoms WILLIAM MCGEHEE, STANIMIR KONDOV, BRIAN DEMARCO, University of Illinois at Urbana-Champaign — We report a measurement of a metal-to-insulator transition in the disordered Fermi Hubbard model (DFHM). The DFHM is the subject of intense research in condensed matter physics due to its applicability to strongly correlated electronic systems. We realize the model using ultracold ^{40}K atoms in an optical lattice superimposed with a speckle light field. We find that the disorder induces an Anderson-like transition for a range of atom-atom interaction strengths in qualitative agreement with theory predictions.

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