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Finite temperature properties of non Fermi liquid state in the Anderson-Hubbard model ANAMITRA MUKHERJEE, National Institute of Science Education and Research, NIRAVKUMAR D. PATEL, NITIN KAUSHAL, ADRIANA MOREO, ELBIO DAGOTTO, The University of Tennessee — We employ a recently developed many-body technique to study the half filled Anderson-Hubbard model at arbitrary Hubbard repulsion U and disorder strength V and at finite temperature. Using finite systems, we establish a quantum percolation threshold for the disorder induced metallization of Mott insulators, and map out the metallic regime as a function of temperature, disorder, and Hubbard repulsion. We thereby capture the continuous quantum phase transition between a Mott state and a non Fermi liquid metal. This metal shows scaling behavior of resistivity with temperature (as T^{α}). We further find a continuum of values for the scaling exponent α in the metallic regime, as a function of disorder and interaction strength, in essence making it tunable. We discuss the properties of the disorder induced bad metal in the context of the 'charge glass' metallic state that can occur in the vicinity of a quantum critical point.

Anamitra Mukherjee
National Institute of Science Education and Research

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