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**Disorder driven quantum phase transitions in transition metal oxides** KOHJIRO KOBAYASHI, NANDINI TRIVEDI, The Ohio State University — We investigate the effect of disorder on a class of transition metal oxides described by a single orbital Hubbard model at half filling and away from half filling. The phases are characterized by the nature of the electronic and spin excitations. We calculate the local density of states, frequency and temperature-dependent conductivity and spin susceptibility as functions of disorder and interaction. The interplay of disorder and correlations produces ususual behavior in the correlated metal, for example, characteristic suppression of density of states at low energies, persistence of gap like features at finite frequency and the presence of local moments. Some of these puzzles can be understood in terms of an inhomogeneous system composed essentially of two-components. We compare our results with recent local scanning tunneling spectroscopy, and optical conductivity measurements. Reference: D. Heidarian and N. Trivedi, Phys. Rev. Lett. 93, 126401 (2004); K. Kobayashi, B.H. Lee, and N. Trivedi, cond-mat.

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