

Abstract Submitted
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Non-perturbative study of itinerant ferromagnetic in t_{2g} -orbital systems ERIC BOBROW, YI LI, Johns Hopkins Univ — We study itinerant ferromagnetism in a t_{2g} multi-orbital Hubbard system where electrons in each orbital band can only move parallel to the corresponding orbital orientation. Electrons in different orbital bands interact through on-site multi-orbital interactions including Hund's coupling. In this talk, we present our non-perturbative results of itinerant ferromagnetism in the strong-coupling limit, where there are no doubly occupied orbitals. By combining the multi-orbital ferromagnetism driven by Hund's coupling for quasi-one-dimensional bands together with generalized Nagaoka-type ferromagnetism, we extend these results to multi-orbital Hubbard models to show the existence of a ferromagnetic ground state in the presence of multiple holes. Possible applications to systems of transition-metal-oxide interfaces will be presented.

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