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Effects of Hund's coupling on the Mott transition in multiorbital systems AARAM JOO KIM, Department of Physics and Astronomy and Center for Theoretical Physics, Seoul National University, GUN SANG JEON, Department of Physics, Ewha Womans University, MOOYOUNG CHOI, Department of Physics and Astronomy and Center for Theoretical Physics, Seoul National University — We study the phase transitions in the two-orbital Hubbard model having different orbital bandwidths, with emphasis on the effects of the Ising-type Hund's coupling. Within the dynamical mean-field theory combined with the continuous-time quantum Monte Carlo method, we confirm the existence of a non-Fermi-liquid for intermediate interactions. In contrast to the paradigmatic Mott transition in the single-band Hubbard model, a metallic phase is dominant over a localized Mott insulator at finite temperatures, resulting in the opposite slope of the phase boundary. We also investigate how the nature of the Mott transition between the non-Fermi liquid and the Mott insulator is affected by the variations in the Hund's coupling strength.

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