

Abstract Submitted
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Constrained-path Quantum Monte Carlo study of the three-orbital Hubbard model for iron-based superconductors GUANGKUN LIU, Department of Physics and Astronomy, University of Tennessee and Department of Physics, Beijing Normal University, SHUHUA LIANG, CHRIS BISHOP, ELBIO DAGOTTO, Department of Physics and Astronomy, University of Tennessee and Materials Science and Technology Division, ORNL — Pairing and magnetic properties of the three-orbital Hubbard model for iron-based superconductors are systematically studied via the constrained-path quantum Monte Carlo method. We further develop the algorithm for multi-orbital Hubbard models in general and introduce parallel techniques to allow for large-lattice simulations. In addition, the effects of the additional d_{xy} orbital are studied by comparing with our previous simulation on the two-orbital model [1].

[1] G.-K. Liu et al., J. Phys.: Condens. Matter 26, 325601 (2014)

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