

Abstract Submitted
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Neutron and ARPES constraints on the couplings of the multi-orbital Hubbard model for the iron pnictides¹ QINLONG LUO, ADRIANA MOREO, ELBIO DAGOTTO, Univ. of Tennessee/ORNL, GEORGE MARTINS, Oakland Univ., DAO-XIN YAO, Sun Yat-Sen Univ., MARIA DAGHOFER, IFW Dresden, RONG YU, Rice Univ. — The results of neutron-scattering and angle-resolved photoemission experiments for the Fe-pnictide parent compounds are shown to impose severe constraints on the range of values that can be considered “realistic” for the intraorbital Hubbard repulsion U and Hund coupling J in multiorbital Hubbard models treated in the mean-field approximation. Phase diagrams for undoped three- and five-orbital models are discussed, and the physically realistic regime of couplings is highlighted [1].

[1] Q. Luo *et al.*, Phys. Rev. B **82**, 104508 (2010), and references therein.

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