

Abstract Submitted
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Exact Results of Itinerant Ferromagnetism in Multi-orbital Hubbard Systems YI NINA LI, Princeton University, ELLIOTT H. LIEB, Department of Mathematics and Physics, Princeton University, CONGJUN WU, University of California, San Diego — We study itinerant ferromagnetism in multi-orbital Hubbard models in certain two-dimensional square and three dimensional cubic lattices. In the strong coupling limit where doubly occupied orbitals are not allowed we prove that the fully spin-polarized states are the unique ground states, apart from the trivial spin degeneracies, for any generic filling factor $0 < n < 2$ ($0 < n < 3$) in two (three) dimensions. This theorem applies to both certain d-orbital transition-metal oxide layer systems and the p-orbital bands with ultra-cold fermions in optical lattices

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