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Sign-problem free quantum Monte-Carlo simulations on itinerant ferromagnetism in multi-orbital band systems SHENGLONG XU, Department of Physics, University of California, San Diego, YI NINA LI, Princeton University , CONGJUN WU, Department of Physics, University of California, San Diego — In a recent paper by Li, Lieb and Wu, it has been proved recently that certain multiorbital Hubbard models exhibit ferromagnetic ground states in strong coupling limit at zero temperature and any generic fillings. In a suitably defined basis, it can be proved that the sign problem of quantum Monte-Carlo simulations is absent. Quantum Monte Carlo simulations are performed to investigate the nature of itinerant ferromagnetism in such systems.

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