Quantum Monte-Carlo study of a two-band boson Hubbard model SIEGFRIED GUERTLER, The University of Hong Kong, Department of Physics, MATTHIAS TROYER, ETH Zurich, Institute for theoretical Physics, FU-CHUN ZHANG, The University of Hong Kong, Department of Physics — We consider a two band boson Hubbard model, in which the on-site interaction is infinity for the intra-band bosons and repulsive for the inter-band bosons. The on-site inter-band boson interaction may facilitate condensation of vacancies of a-boson and interstitials of b-boson. We report results of large scale quantum Monte Carlo simulations to study possible supersolid phases of the model.

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