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Ground state properties of one- and two-component Bose-Hubbard model[1] BARBARA CAPOGROSSO-SANSONE, SEBNEM GUNES SOYLER, NIKOLAY PROKOF'EV, BORIS SVISTUNOV, Physics Department, University of Massachusetts, Amherst — We report results for the ground state properties of the single component Bose-Hubbard model and preliminary results for the two-component system at total unity filling factor. Our study is based on exact quantum Monte Carlo simulations by worm algorithm. We compare our answers with those of existing analytic calculations based on strong coupling expansion and mean field theory.

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