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**Thermodynamic properties of Bose-Hubbard model.** BARBARA CAPOGROSSO-SANSONE, NIKOLAY PROKOF'EV, BORIS SVISTUNOV, Department of Physics, University of Massachusetts, Amherst, Massachusetts 01003 — We perform Monte Carlo simulations of bosons in a three-dimensional optical lattice. We present accurate data for the ground state phase diagram and for the finite-temperature thermodynamic properties, including specific heat and entropy. Our data form a basis for an accurate thermometry of the system.

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