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Weakly interacting bosons in a periodic optical lattice\textsuperscript{1} QINQIN LU, KELLY R. PATTON, DANIEL E. SHEEHY, Louisiana State University — We study an interacting boson gas in a periodic optical potential, with the goal of understanding the properties of such a gas away from the Mott insulating regime at large optical lattice depth. In particular, we analyze the density dependence of the transition temperature as a function of optical lattice depth and the response to a dynamical modulation of the optical lattice.

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