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Calculation of collective modes of atoms in an optical lattice SARA BERGKVIST, EMIL LUNDH, PATRIK HENELIUS, ANDERS ROSENGREN, KTH, Sweden — The excitation spectrum of bosons in an optical lattice with a confining potential has been studied using quantum Monte Carlo. Moments of the strength function have been calculated from the ground state expectation values. From these moments information about the collective behavior of the atoms has been extracted. The response of the system to two different perturbations has been examined.

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