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Edge States in Cold Atom Optical Lattices[1] VITO SCAROLA, SANKAR DAS SARMA, University of Maryland — We argue that edge state response to external potentials applied to trapped insulators in cold atom optical lattices offer a unique probe of bulk physics. As an example we study the trapped Bose-Hubbard model using Gutzwiller mean-field theory. We calculate the response of Mott insulator edge states to external potentials. We show that the response leads to observables which may be extracted from time of flight measurements.

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