

Abstract Submitted  
for the DAMOP08 Meeting of  
The American Physical Society

**Controlled transport of atoms in optical lattices** BRIAN MISCHUCK, Student, IVAN DEUTSCH — The coherent transport of atoms in optical lattices is essential for quantum computation and quantum simulations involving controlled collisions between the atoms. Such coherence is typically limited by inhomogeneities and background fields. By applying the techniques of quantum control, we study protocols for robustly evolving the motional wave function in the ground band using applied external fields, and well-designed lattices.

Brian Mischuck  
Student

Date submitted: 04 Feb 2008

Electronic form version 1.4