Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Breathing modes and stability of trapped two-component ultracold atoms[1] CHOU-CHUN HUANG, WEN-CHIN WU, National Taiwan Normal University — The breathing modes and stability of trapped two-component ultracold atoms are studied using a variational method. We consider a boson-boson, a boson-fermion, and a fermion-fermion mixture in a 3D isotropic harmonic trap and in a 1D optical lattice. When the two components are miscible, the corresponding in-phase and out-of-phase breathing mode frequencies are calculated against the value of the inter-component interaction. The stability of the two-component system is shown to have strong correlation with the behaviors of breathing modes.

[1]Supported by the National Science Council of Taiwan.

Wen-Chin Wu
National Taiwan Normal University

Date submitted: 30 Nov 2005 Electronic form version 1.4