Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Universal contact of strongly interacting Fermi gases MARK DELLOSTRITTO, THEJA DE SILVA, Binghamton University — We study strongly interacting two component Fermi gas near a Feshbach resonance. By using a ground state energy functional constructed based on asymptotic limits and Monte Carlo calculations, we calculate the contact, structure factor, and collective oscillation frequencies in the BCS-BEC crossover region. The calculated contact and structure factor show excellent agreement with recent experiments. We show that the upper bounds of the collective modes have universal form in the sense that they depend only on the contact and the homogenous energy. In other words, the collective modes of the Fermi atoms trapped near Feshbach resonance can be calculated without the explicit knowledge of trapping potential.

Theja De Silva
Binghamton University

Date submitted: 19 Nov 2010 Electronic form version 1.4