Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Suppression of T_c by Medium Effects from Dilute to Dense Regime: A Crossing-symmetric Approach[1] KHANDKER QUADER, RENYUAN LIAO, Department of Physics, Kent State University — We study medium effects on superfluid transition temperature of 1- and 2-component strongly correlated Fermi systems. A crossing-symmetric approach allows us to explore this across dilute and dense regimes within a single framework. We include many-body effects such as density, spin-density, and current fluctuations. Pairing interactions are deduced from scattering amplitudes in the pairing channel. For 2-component systems, we find the known factor-of-2 suppression in T_c to be robust across both regimes, except near the unitarity limit, where the suppresion is more pronounced. For the 1-component case, the suppresion can be greater, and not universal across the regimes. We discuss possible physical causes for the T_c suppression.

[1]Partially supported by ICAM

Khandker Quader
Department of Physics, Kent State University

Date submitted: 20 Nov 2006 Electronic form version 1.4