Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Fulde-Ferrel-Larkin-Ovchinnikov paired atomic superfluids DANIEL SHEEHY, LEO RADZIHOVSKY, University of Colorado — The Fulde-Ferrel-Larkin-Ovchinnikov (FFLO) paired superfluid is a periodically modulated, finite magnetization relative of the conventional BCS superconductor. While the FFLO state has proven elusive in condensed-matter experiments, we will argue that it is naturally realized in a cloud of two species of ultra-cold fermionic atoms interacting through a Feshbach resonance, with the difference in the number of the two species playing the role of an imposed magnetization. Motivated by this possibility, we have computed the phase diagram of such atomic systems as a function of Feshbach resonance detuning, temperature and magnetization.

Daniel Sheehy
University of Colorado

Date submitted: 30 Nov 2004 Electronic form version 1.4