

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Spin-polarized fermionic superfluidity in a trap DANIEL E. SHEEHY, LEO RADZIHOVSKY, University of Colorado — Recent research on Feshbach resonantly paired superfluids has focused on the fate of such superfluidity upon changing the relative population of the two hyperfine states undergoing pairing. I will discuss recent work[1] showing that such imposed spin polarization frustrates pairing and leads to a rich phase diagram consisting of a polarized superfluid, phase separation, and Fulde-Ferrell-Larkin-Ovchinnikov phases. In the spatially inhomogeneous environment of a trap, the local spin polarization (magnetization) is also inhomogeneous, providing a direct signature of these phases. I will discuss this and other signatures of such phases in degenerate atom experiments. This work was supported by NSF DMR-0321848 and the Packard Foundation. [1] D.E. Sheehy and L. Radzihovsky, cond-mat/0508430.

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Date submitted: 28 Nov 2005

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