

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Shape of the Normal-Superfluid Boundary in Polarized Fermi Gases STEFAN NATU, ERICH MUELLER, LASSP, Cornell University — We model the normal-superfluid boundary in a trapped polarized Fermi gas as an elastic membrane and calculate the density profile. For weak trapping anisotropy, the normal-superfluid boundary remains elliptical, in agreement with the LDA. However, for strong anisotropy, the boundary becomes distorted into a capsule-like shape. As one moves axially from the edge of the trap to the center, the radius of the boundary almost discontinuously jumps. In addition to full numerical calculations, we present a simple model that predicts the density profile in the limit of large trapping anisotropy.

Stefan Natu
LASSP, Cornell University

Date submitted: 27 Nov 2007

Electronic form version 1.4