

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Effect of the surface tension on the shape of the superfluid region in population imbalanced unitary Fermi gases. THEJA DE SILVA, Binghamton University, ERICH MUELLER, Cornell University — We use a variational approach to determine the shape of the central superfluid shell of a population imbalanced unitary Fermi gas. We find that the surface tension between superfluid and normal regions significantly distorts the superfluid shell from an ellipsoidal shape to a cylindrical shape as experimentally seen in highly anisotropic traps. Comparing with experimental data, we find that the surface tension has strong temperature dependence and this allows us to compare the temperatures of various available experiments.

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Date submitted: 26 Nov 2007

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