

Abstract Submitted  
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**Understanding the Superfluid phase diagram in trapped Fermi gases**<sup>1</sup> KATHY LEVIN, QIJIN CHEN, University of Chicago — We address previous experimental observations of the condensation of fermionic atom pairs involving trapped Fermi gases which can be tuned from the BCS to BEC regime, with the application of magnetic fields. In the intermediate regime, condensation is demonstrated experimentally by a sweep technique that pairwise projects fermionic atoms onto molecules. While the condensate fraction is measured after a fast sweep to BEC, the temperature is measured by a slow adiabatic sweep to the Fermi gas regime. In this paper we compare the normal-superfluid phase boundary in this temperature-magnetic field plane as obtained in this way for  $^{40}\text{K}$  and computed theoretically. We demonstrate good agreement between the two.

References: arXiv:cond-mat/0411090; Phys. Rev. Lett., in production.

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