

Abstract Submitted
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A repulsive atomic gas in a harmonic trap on the border of itinerant ferromagnetism GARETH CONDUIT, Weizmann Institute & Ben Gurion University, BEN SIMONS, University of Cambridge — Alongside superfluidity, itinerant (Stoner) ferromagnetism remains one of the most well-characterized phases of correlated Fermi systems. A recent experiment has reported the first evidence for novel phase behavior on the repulsive side of the Feshbach resonance in a two-component ultracold Fermi gas. By adapting recent theoretical studies to the atomic trap geometry, we show that an adiabatic ferromagnetic transition would take place at a weaker interaction strength than is observed in experiment. This discrepancy motivates a simple non-equilibrium theory that takes account of the dynamics of magnetic defects and three-body losses. The formalism developed displays good quantitative agreement with experiment. Accepted for publication in *Phys. Rev. Lett.*

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