

Abstract Submitted
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Cold Fermion Pairing in Two-Dimensional Harmonic Traps¹

JEREMY ARMSTRONG, Lund University, MASSIMO RONTANI, Modena University, SVEN ÅBERG, Lund University, VLADIMIR ZELEVINSKY, NSCL and Michigan State University, STEPHANIE REIMANN, Lund University — Trapped, ultra-cold atomic gasses have provided a rich testing ground for quantum theories. We apply a pairing model from nuclear physics to a 2D harmonically confined, two-component atomic gas containing 2-9 particles. Our Hamiltonian consists of the oscillator mean field and a contact pairing interaction. We calculate excitation spectra, yrast spectra, the BCS delta, and addition energies for various values of the pairing strength. As expected, when the interaction is weak, the oscillator mean field is dominant, and as the interaction strength is increased, pairing effects become quite clear. Results are compared with *ab initio* calculations.

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