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Pairing in Small, 2D Fermi Systems[1] JEREMY ARMSTRONG, Lund University, MASSIMO RONTANI, CNR-IFNM National Research Center, SVEN ABERG, Lund University, VLADIMIR ZELEVINSKY, Michigan State University, STEPHANIE REIMANN, Lund University — In recent years, 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 pairing gap, 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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