

Abstract Submitted
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Many body effects close to the s-wave Feshbach resonance in two-component Fermi systems: Is a triplet superfluid possible? SERGIO GAUDIO, Theoretical Division, LANL; Dept of Physics, Boston College, JASON JACKIEWICZ, KEVIN BEDELL, Department of Physics, Boston College — We investigate the p-wave correlations at the BEC-BCS crossover in ultracold fermionic atom gases. We use a generalization of the *s*-wave approximation for the mean field properties of a multi-state fermionic Hamiltonian in the HFB framework. We explore the p-wave contributions to the ground state correlations, and the corresponding density and spin response functions. The simulations are carried out for a short-range attractive interaction, by keeping fixed the particle density number of the system, and varying the scattering of the interaction. The p-wave contributions are expected to be significant at large densities, and vanish in the dilute limit.

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