Non-Fermi Liquid Nature of the Two-dimensional Dipolar Fermi Gas

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We have performed ground state calculations using the Fermi hypernetted-chain Euler-Lagrange method and fixed-mode Diffusion Monte Carlo calculations for the two-dimensional single-component dipolar Fermi gas. We find that already at very low densities the system has a topological instability of the Fermi disk against particle-hole excitations.

Section: QG - Quantum gases

Keywords: phase transition, quantum gas, dipole interaction