

Abstract Submitted
for the DAMOP06 Meeting of
The American Physical Society

Imaginary-time methods for finding ground states of fermion atomic gases JOCHEN WACHTER, JILA, University of Colorado, Boulder, CO 80309-0440, USA, MURRAY HOLLAND, JILA, University of Colorado, Boulder, CO 80309-0440, USA, MARILU CHIOFALO, Università di Pisa, I-56126 Pisa, Italy — Steepest descent methods using imaginary-time propagation of the Gross-Pitaevskii equation have been extremely useful for finding ground states in Bose-Einstein condensed systems. We have extended these methods to treat interacting fermion gases. In particular, we can find zero-temperature ground states for density matrix equations. We apply this method to the BCS theory of superconductivity and the two-channel model of the Bose-Fermi crossover problem.

Jochen Wachter
JILA, University of Colorado, Boulder

Date submitted: 27 Jan 2006

Electronic form version 1.4