

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Strongly-correlated fermionic matter in the dilute limit BOGDAN MIHAILA, Los Alamos National Laboratory, ANDRES CARDENAS, Cal Poly Pomona — We study “the ground-state properties of the many-body system composed of spin-1/2 fermions interacting via a zero-range, infinite scattering length contact interaction.” The above is referred to sometimes as the *George Bertsch problem*, and is of particular interest in astrophysics in connection with the equation of state for neutron matter and has been revisited recently with the advent of experimental studies of the BCS to BEC crossover in ultracold fermionic atom gases. We will show that new insights into the solution to this problem are obtained in the context of a coupled-cluster (exp S) expansion approach to calculating the equation of state for dilute fermionic systems and that present state-of-the-art Monte Carlo calculations have not yet provided the definitive answer.

Bogdan Mihaila
Los Alamos National Laboratory

Date submitted: 21 Oct 2008

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