Exact Relations for A Strongly-Correlated Fermi Gas With Large Scattering Length[1] SHINA TAN, INT, Univ of Washington — A 2-component Fermi gas with a large and tunable scattering length a is considered. If the inter-fermionic forces have a range much shorter than the average interparticle spacing, the characteristic de Broglie wavelength, and $|a|$, the system is in a universal regime in which the interaction is described by a single parameter, a. We show that the energy, the momentum distribution, the pressure, the change of energy during a real-time ramp of the scattering length, and the energy spectrum of such a Fermi gas satisfy a few simple *exact* relations. The importance of the C/k^4 tails of the momentum distributions at large k is stressed. Implications of these results for experiments on ultracold atomic Fermi gases near Feshbach resonances are discussed.

Shina Tan
INT, Univ of Washington

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