

MAR05-2004-003492

Abstract for an Invited Paper  
for the MAR05 Meeting of  
the American Physical Society

**Scattering properties of weakly-bound dimers of Fermi atoms**

DMITRY PETROV, ITAMP, Harvard-Smithsonian CfA and Harvard-MIT Center for Ultracold Atoms, Cambridge, Massachusetts, U.S.A.

We discuss the behavior of weakly bound bosonic dimers formed in a two-component Fermi gas with a large positive scattering length for the interspecies interaction. We present a theoretical approach for solving a few-body scattering problem and describe the physics of dimer-dimer elastic and inelastic scattering. We explain why these diatomic molecules, while in the highest ro-vibrational level, are characterized by remarkable collisional stability.

Co-authors are Christophe Salomon, LKB, Ecole Normale Supérieure, Paris, France; Georgy Shlyapnikov, LPTMS, University of South Paris, Orsay, France.