

MAR06-2005-002941

Abstract for an Invited Paper  
for the MAR06 Meeting of  
the American Physical Society

**Fermi superfluids with p-wave pairing near a Feshbach resonance**

ROBERTO DIENER, Department of Physics, The Ohio State University

Fermi superfluids with s-wave pairing near an s-wave Feshbach resonance are being extensively studied both theoretically and experimentally. Recently, Feshbach resonances in the p-wave channel have been observed in both  $^{40}\text{K}$  and  $^6\text{Li}$ , raising the possibility that fermionic superfluids with p-wave pairing could be attained at low temperatures. Since the pairing wavefunction in this case breaks rotational symmetry, the superfluid properties of this system in the BEC-BCS crossover will be much different from the s-wave case. In particular, I will discuss the symmetry of the ground state as well as the experimental signatures of these novel superfluids as a function of the parameters defining the resonance. Other new results on resonance physics will also be reported.