

NUCLEAR THEORY LUNCH SEMINAR

THURSDAY, 23rd OCTOBER 2003,

NUCLEAR THEORY LOUNGE 12:30pm.

**TITLE: Phase Separation in Asymmetrical Fermion
Superfluids**

Speaker: Dr. Heron Caldas, LBNL

Abstract: The pairing between particles with opposite spin and equal and opposite momenta near their (common) Fermi surface is described by the standard BCS theory of superconductivity. We show that if a fermionic system is asymmetrical - composed by two particle species with different densities (or chemical potentials) - its ground state is a mixed phase formed by normal and superfluid components.