MONTANA STATE UNIVERSITY

Physics Colloquium

Friday October 18th, 2012
4:10 – 5:00 pm, EPS108

"Topological quantum states in condensed matter physics: chiral superfluids"

Dr. William Halperin, Northwestern University

Abstract:

New chiral states of 3He have recently been studied at Northwestern and are similarly thought to exist in a number of superconducting compounds, like UPt3 and Sr2RuO4. In the past few years or more, the condensed matter physics community has become enamored of manifestations of long range coherence in these superconductors and superfluids, driven in part from predictions for their potential application to quantum computation. However, I will focus my story on various physical properties which are a consequence of chirality, most clearly in evidence in UPt3 and superfluid 3He. These systems have multiple thermodynamic phases, each with a different order parameter structure, and my discussion of them will be a guided tour of search and discovery.

Host:

Anton Vorontsov

Refreshments served in the EPS second floor lobby at 3:45, prior to the talk