PHYSICS AND ASTRONOMY

COLLOQUIUM

Dr. Ben Mazin

University of California/Santa Barbara

"Microwave Kinetic Inductance Detectors for Astrophysics"

Abstract

Microwave Kinetic Inductance Detectors, or MKIDs, have proven to be a powerful cryogenic detector technology due to their sensitivity and the ease with which they can be multiplexed into large arrays. A MKID is an energy sensor based on a photon-variable superconducting inductance in a lithographed microresonator, and is capable of functioning as a photon detector across the electromagnetic spectrum as well as a particle detector. I will give a brief background on MKIDs, as well as describe science goals and recent results from our MKID camera operating at the Palomar 200" and Lick 120" telescopes. I will also present a new instrument concept, a Superconducting Multi-Object Spectrograph (SuperMOS), which uses MKIDs in conjunction with a focal plane mask or similar light selection technology. The design and science goals of a SuperMOS designed for LSST follow-up called 'Giga-z' will be discussed.

Wednesday, October 03, 2012
3:30 p.m.
Bob Wright Centre
Room A104