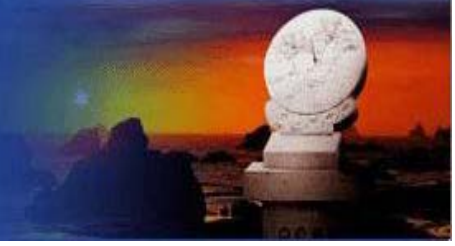




復旦大學

Fudan University



## 复旦大学物理系物质科学报告

### Physics Department Colloquium

# Majorana Neutrinos and Neutrinoless Double Beta Decay

**Prof. Huan Zhong Huang**

*University of California, Los Angeles & Fudan University*

Neutrino oscillation measurements have indicated that neutrinos must have masses. But the absolute scale of the neutrino masses and the neutrino mass hierarchy have not been determined. Furthermore, the possibility of neutrinos being Majorana particles (neutrino and anti-neutrino are the same) remains an intriguing hypothesis. Neutrinoless double beta decay (0νbb) experiments are designed to address these outstanding questions of neutrino properties. I will give an overview of the 0νbb physics and report recent results from the CUORE (Cryogenic Underground Observatory for Rare Events) experiment at the Gran Sasso National Laboratory (LNGS) in Italy. I will discuss possible options for next generation of 0νbb experiments.

Current Research Program

- 1) studies of Quantum Chromo Dynamics (QCD) at high temperature and energy density and properties of the Quark-Gluon Plasma in nucleus-nucleus collisions with the STAR experiment at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory.
- 2) searches for neutrinoless double beta decays with the CUORE experiment at Gran Sasso National Laboratory in Italy. He is a Fellow of the American Physical Society.

**Time: 2:00pm, Tuesday, November 8, 2016**

**Location: Physics Building, Room 221B**

**(Cookies and coffee are served from 1:30 pm)**