

# LNGS SEMINAR SERIES

**Lucia Canonica**

*INFN - LNGS*

---

## **Results from the search for neutrinoless double beta decay of $^{130}\text{Te}$ with CUORE-0**

---

The Cryogenic Underground Observatory for Rare Events (CUORE) will search for neutrinoless double beta decay of  $^{130}\text{Te}$  with an array of 988  $\text{TeO}_2$  bolometers and a combined mass of 206 kg of  $^{130}\text{Te}$ . The discovery of this decay would demonstrate lepton number violation, establish the Majorana nature of neutrinos, and constrain the effective Majorana neutrino mass. CUORE-0, the first element of the CUORE detector array, was commissioned at the Laboratori Nazionali del Gran Sasso as a standalone experiment and has been taking data since March 2013. The talk will report the results of a search for neutrinoless double beta decay in 9.8 kg-years  $^{130}\text{Te}$  exposure collected between March 2013 and February 2015 and discuss the implications for the upcoming CUORE experiment.

---

**APRIL 9, 2015 – 11:30 AM**  
**LNGS - "E. FERMI" AUDITORIUM**