



Contribution ID: 110

Type: Talk

## Searching for neutrinoless double beta decay with CUORE and CUORE-0

The Cryogenic Underground Observatory for Rare Events (CUORE) is a 1-ton scale double beta decay experiment based on cryogenic bolometers currently in its final stages of construction at the Gran Sasso National Laboratory (LNGS). The detector consists of an array of 988  $\text{TeO}_2$  crystals arranged in a cylindrical compact structure of 19 towers. Its primary goal is to search for neutrinoless double beta decay of  $^{130}\text{Te}$ , a process that, if observed, would probe the Majorana nature of the neutrinos and demonstrate lepton number violation. CUORE-0 was the CUORE demonstrator: with 52 CUORE-like bolometers it served as a proof-of-concept of the CUORE technology and, in combination with its predecessor CUORICINO, produced the most stringent limits to the half life of  $^{130}\text{Te}$ . In this talk we will present the final CUORE-0 results on neutrinoless double beta decay and the corresponding detector performance. We will also discuss the status of the CUORE experiment and its physical potential.

**Author:** Dr TBD, Cuore collaboration (.)

**Presenter:** Dr TBD, Cuore collaboration (.)

**Session Classification:** Flavour Physics

**Track Classification:** Flavour Physics