



Friday 8 July, 11:15 – 11:35

Session 14: Neutrino properties II: searches for neutrinoless double beta decay (continued) and direct mass measurements

Status and prospects for CUORE

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CUORE (Cryogenic Underground Observatory for Rare Events) is a ton-scale experiment for the search of neutrinoless double beta decay in ^{130}Te with tellurium oxide bolometers, with a projected sensitivity close to the inverted mass hierarchy region. The CUORE detector design and background budget have been validated by CUORE-0: an array of 52 TeO_2 bolometers built using the same protocols developed for CUORE and running at the Gran Sasso Laboratories for two years, up to spring 2015. In this talk we will present the final result on neutrinoless double beta decay from CUORE-0, and show that its performance in terms of background and energy resolution fully supports the expectations for the CUORE sensitivity. In addition, we will summarize the status of CUORE that is now in its final construction stage: all towers have been assembled and are ready for installation in the cryostat. Data operations are foreseen to begin within this year. We will also briefly review the major R&D activities towards the upgrade of CUORE, on view of the next generation bolometric neutrinoless double beta decay experiment.