

Abstract Submitted
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CUORE: The Cryogenic Underground Observatory for Rare Events¹ E.B. NORMAN, M.J. DOLINSKI², Lawrence Livermore National Lab. — CUORE is a next-generation double beta decay experiment designed primarily to search for the neutrinoless double beta decay of ^{130}Te . CUORE will use a bolometric technique to measure the temperature changes produced in large crystals of TeO_2 when radiation is absorbed. ^{130}Te was selected for initial study because of its high $Q_{\beta\beta}$ energy of 2529 keV and its large natural isotopic abundance of 34%. These characteristics of ^{130}Te place the expected position of the neutrinoless double beta decay peak above most background from terrestrial radioactive decays, and provide the desired experimental sensitivity without the need for expensive and time consuming isotopic enrichment. The construction of CUORE has recently begun at the LNGS in Italy. CUORICINO is a working prototype for CUORE and is currently the largest operating double beta decay experiment in the world. In this talk, the present status of CUORE and the latest experimental results from CUORICINO will be presented.

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