

CUORE-0 background analysis and evaluation of the ^{130}Te DB2nu decay half-life

Tuesday, 31 May 2016 18:30 (20 minutes)

Summary

CUORE is an experiment that will search for the neutrinoless double beta decay of ^{130}Te . The detector is composed by 988 TeO_2 bolometers, 750 g each, arranged in a structure of 19 towers and is now in its final commissioning phase at LNGS, Italy. CUORE-0 is a single CUORE-like tower that was run from March 2013 to July 2015 to test the performance of the CUORE experiment. In this talk we present the results of the model developed to analyze the CUORE-0 energy spectrum, disentangling the amount and the position of the background sources that combine to form the observed spectrum. A direct outcome of this analysis is the measurement of the ^{130}Te betabeta2nu decay half-life, of which we provide a preliminary evaluation.

Presenter: CHIESA, Davide (University and INFN Milano Bicocca)

Session Classification: Neutrinos