

Neutrinoless Double Beta Decay Search in Gerda

Authorship annotation

for the GERDA collaboration

Session and Location

Monday Session, Poster Wall #156 (Hölderlin-Room)

Abstract content

The Germanium Detector Array (GERDA) is currently the most sensitive experiment in search of the Neutrinoless Double Beta Decay ($0\nu\beta\beta$) of Ge-76, a process that violates lepton number conservation. GERDA operates an array of bare high-purity germanium detectors enriched in Ge-76 in a cryostat with 64 m³ of liquid argon at LNGS, Italy, at 3500 m w.e.

The experiment is taking data since November 2011, commencing with Phase II after a major hardware upgrade in December 2015. Another upgrade is planned to be accomplished by the time of the conference. So far no signal was observed and a new lower limit on the $0\nu\beta\beta$ half-life $T_{1/2} \geq 8.0 \cdot 10^{25}$ yr (90% C.L.) was obtained combining all data sets. Also, we have reached our background goal of ≤ 10 -3 cts/(keV·kg·yr).

This poster gives an overview of the GERDA experiment up to the current upgrade. In particular, it presents the active background suppression methods and the latest analysis results.

Poster included in proceedings:

yes

Primary author(s) : Dr. HEISEL, Mark (Max-Planck-Institut für Kernphysik)

Presenter(s) : HAKENMÜLLER, Janina (Max-Planck-Institut für Kernphysik)

Session Classification : Poster Session Monday

Track Classification : Poster (not participating in poster prize competition)