

## Neutrinoless Double Beta Decay Search in Gerda

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  $64\text{ m}^3$  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  $T_{1/2} \geq 8.0 \cdot 10^{25}\text{ yr}$  (90% C.L.) was obtained combining all data sets. Also, we have reached our background goal of  $\leq 10^{-3}\text{ cts}/(\text{keV}\cdot\text{kg}\cdot\text{yr})$ .

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.

### Authorship annotation

for the GERDA collaboration

### Session and Location

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

### Poster included in proceedings:

yes

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