

## FIRST RESULTS FROM PHASE II OF THE GERDA EXPERIMENT

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The goal of the GERDA (GERmanium Detector Array) experiment located at the Laboratori Nazionali del Gran Sasso of INFN, Italy, is to search for neutrinoless double beta decay with germanium detectors enriched in  $^{76}\text{Ge}$ . GERDA consists of two phases. In both of them high purity germanium detectors are immersed directly in liquid argon which acts not only as cooling medium, but also as passive (in Phase I) or active (Phase II) shield against external radiation.

GERDA Phase I, where about 18 kg of semi-coaxial detectors made from  $^{76}\text{Ge}$  were used, was successfully completed in 2013. The designed background index of  $10^{-2}$  counts/(keV kg yr) was achieved and the lower limit on the half-life of  $^{76}\text{Ge} > 2.1 \cdot 10^{25}$  yr (90% C.L.) was set.

GERDA Phase II started in December 2015. Total mass of germanium was increased to about 35 kg by adding 30 novel thick-window BEGe (Broad Energy Germanium) detectors. In the actual stage the liquid argon scintillation veto has been installed. Phase II is aiming to reduce the background index to  $10^{-3}$  counts/(keV kg yr) and reach the sensitivity of the experiment  $T_{1/2} > 10^{26}$  yr after nearly three years of data taking. In this talk, the evaluation of GERDA Phase II performance based on the analysis of data collected so far is presented.