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Background free search for neutrinoless double beta decay with GERDA Phase II

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An observation of neutrinoless double beta decay would allow to shed light onto the particle nature of neutrinos. GERDA (GERmanium Detector Array) aims to discover this process in a background-free search using 76Ge. Bare isotopically enriched high purity germanium detectors are operated in liquid argon. GERDA is located at the Laboratori Nazionali del Gran Sasso (LNGS) of INFN in Italy and follows a staged approach. In Phase II 35.6 kg of enriched germanium detectors are operated since December 2015. The application of active background rejection methods, such as a liquid argon scintillation light read-out and pulse shape discrimination of germanium detector signals, allowed to reduce the background index to the intended level of 10−3 cts/(keV·kg·yr). The talk will discuss the current status and latest results of the experiment.

Presenter: WIESINGER, Christoph (Technical University of Munich)

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