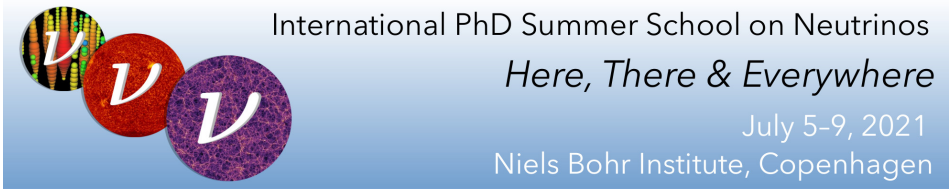

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Neutrinoless double beta decay search with GERDA and LEGEND

Thursday 8 July 2021 14:00 (15 minutes)

The GERDA and LEGEND-200 experiments were designed to search for the neutrinoless double beta decay of 76-Ge (0νββ: 76Ge ⟶76Se+2e−) in high-purity germanium detectors operated in ultra-pure liquid argon. Their ultimate goal is to shed light on the as-yet-unknown nature of neutrinos and possibly explain the matter-antimatter asymmetry in the universe that would be induced in case neutrinos are their own antiparticles. The most stringent limit on the half-life of 0νββ-decay has been recently set by GERDA, which ended in late 2019 to allow for the construction of its successor, LEGEND-200. The aim of LEGEND-200 is to increase the sensitivity to 0νββ-decay by one order of magnitude. To achieve this goal, an excellent energy resolution and enhanced background vetoing efficiency are crucial. In this talk, I will show the latest results of GERDA and the R&D work for LEGEND, focusing on the construction and characterization of its liquid argon veto.

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