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Активное аргоновое вето для второй фазы эксперимента GERDA

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The liquid argon veto system (LAr veto) is a detector system aimed to detect argon scintillations in the vicinity of the Ge detector array of GERDA experiment. The goal is to reject background events in the Ge detectors caused by γ background from natural decay chains and α or β decays near/on detector surface. A low background LAr veto instrumentation has been installed for Phase II and the intended background index of $\sim 10^{-3}$ cts/(keV \cdot kg \cdot yr) has been confirmed. Ultimate goal for next generation LEGEND experiment phase I is upgrade of existing GERDA infrastructure up to 200 kg HP-Ge with background reduction up to 5 times relatively to GERDA experiment. Therefore, it's necessary to update the liquid argon fiber shroud system to improve operation stability, constructive materials radiopurity and new Ge detector array design compability.

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