

Development of an anti-Compton veto for HPGe detectors operated in liquid argon using Silicon Photo-Multipliers

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A proof of concept detector is presented for scintillation light detection in liquid argon using Silicon Photo-Multipliers. The aim of the work is to build an anti-Compton veto for germanium detectors operated directly in liquid argon like in the GERDA experiment. Properties of the Multi-Pixel Photon Counter (MPPC) are studied at cryogenic temperatures. To increase the light collection efficiency of the MPPCs wavelength shifting fibers were used. A veto efficiency comparable to a similar setup with a Photo-Multiplier Tube was achieved.

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