

Development of Highly Integrated Low-mass Signal Readout Electronics for the LEGEND Experiment

The LEGEND experiment is a future large-scale experiment that will search for neutrinoless double beta decay ($0\nu\beta\beta$) in the isotope ^{76}Ge using high purity germanium detectors. Its observation would establish lepton number violation, provide information on the neutrino mass and open a window to understand matter dominance in our universe.

The signal readout is one of the most important components of a $0\nu\beta\beta$ experiment since it facilitates the conversion of charges produced in the detectors into appropriately shaped voltage signals. Current $0\nu\beta\beta$ experiments such as GERDA and MAJORANA use a readout solution consisting of several discrete electronic components. This poster focuses on our research at the Max Planck Institute for Physics and TUM where we are developing a signal amplifier based on *application specific integrated circuit* (ASIC) technology provided by XGLab that allows us to combine all relevant components in a single low-mass chip.

Session and Location

Monday Session, Poster Wall #96 (Auditorium Gallery Left)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)