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Charge migration in the germanium detectors of the EDELWEISS-III experiment

EDELWEISS-III is a direct dark matter search program looking for WIMPs using cryogenic germanium bolometers. A system of electrodes produces a homogeneous electric field in the inner region of the germanium crystals. The simultaneous readout of the heat increase and the ionization signal from scattered particles allows the discrimination of germanium nuclei recoils from electron recoils. For a discrimination of γ-ray background (electron recoils) of the order of 10^5 the charge collection has to be as complete as possible.
In this poster the principle of modeling the charge migration in high purity germanium crystals at low temperatures (20 mK) and low electric fields ($< 10\,\mathrm{V/cm}$) is presented. Results from measurements with a test detector, that is produced the same way as the EDELWEISS-III detectors, are shown.
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