Position dependence analysis in phonon-based detectors

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Position dependence of signals in phonon-based detectors that consist of a large volume absorber and phonon collecting film on its surface is one of the major factors that degrades energy resolution in rare event search experiments. For the better detection performance, techniques are being developed to identify and minimize any position dependence. Here we report the idea and the result of a dual-phonon detection method which uses two identical phonon sensors to analyse the event position, and a position-dependent correction method using a GEANT4 simulation.