HAP Workshop Topic 4, Advanced Technologies



Contribution ID: 9

Type: not specified

Usage of (_ ^37)Ar for calibration of large liquid xenon detectors

Tuesday 3 June 2014 14:10 (20 minutes)

Standard calibration methods for liquid xenon detectors includes the calibration with external sources of gammas or neutrons. Due to the excellent selfshielding of xenon against radiation, these methods are not usable at large detectors like the upcoming XENON1T or DARWIN experiments. To reach the inner regions of large detectors, radiation sources are needed, which can be induced into the detection medium. (37)Ar is one possible isotope for the use of an internal calibration source. We will present a method of producing (37)Ar out of ($_{^{36}}$)Ar by irradiation in a reactor and the construction of a device for inducing and dosing the trace gas into the gas recirculation system of a liquid xenon detector.

Primary author: HILS, Christopher (Johannes Gutenberg-Universität)Presenter: HILS, Christopher (Johannes Gutenberg-Universität)Session Classification: Session 5