

Xenon Calibration Generator

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Xenon spikes measurement is a key factor for Xe equipment calibration and a quality assessment/quality control programme for noble gas cluster. It is very important to have four Xe isotopes at the spike samples (Xe-131m, Xe-133, Xe-133m, Xe-135). The spikes are produced by contractors organized by the Comprehensive Nuclear-Test-Ban Treaty Organization. Unfortunately, due to very short half live of Xe-135 and small amount of Xe-133m in the spikes together with long spike delivery time and possible customs problems it is impossible to properly perform ROIs calibration for that isotope on site or even on the manufacturer's premises. Thus, now for detector calibration only Xe-133 and Xe-131m are widely used. Miscalculation during Xe efficiency calculations and ratios errors lead to some difficulties, such as false positive events, false alarms, etc. This poster shows new developments and first results of Automatic Xenon Generator based on 252Cf. This technique allowed to obtain xenon activity about 1000Bq, which was used for preparation of calibration sources by precision dosing method. The spikes are possible to milk at the Vienna International Centre or on site. The device is portable and has a user friendly interface for operation in automatic or manual modes. The poster will include all calibration process steps for different Xe equipment based on the four Xenon method.

Promotional text

Automatic xenon calibration generator

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