

Study of Radioxenon in Soil Gas in Sweden

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The radioactive xenon isotopes Xe-131m, Xe-133, Xe-133m and Xe-135 are important indicators for an underground nuclear explosion. Knowledge about the concentrations and ratios of these isotopes that can be expected due to natural processes is important to be able to discriminate from a nuclear explosion during a CTBT on-site inspection. A series of measurements has been performed 2019 and 2022 under different weather conditions within a limited area in the region of Kvarntorp (Sweden), a location with known elevated uranium content in the ground. These studies aim to understand the variation, due to e.g. meteorological conditions and radon concentrations, and try to set an upper limit on expected natural concentrations of the xenon isotopes in soil gas. The processing and transfer times have been optimized to increase the detecting sensitivity to increase the potential of detecting short lived isotopes, and the result from these campaigns will be presented.

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Promotional text

Results from studying the natural background of radioxenon in soil gas will be presented.

Oral preference format

in-person

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