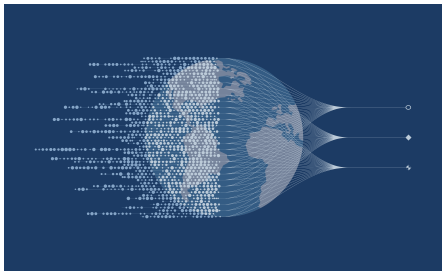

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First results of radioxenon detections of SAUNA III and three SAUNA QB networks in Lithuania

Wednesday 10 September 2025 14:00 (15 minutes)

The SAUNA III and three SAUNA QB networks in Lithuania for radioxenon detection in the atmosphere have been successfully launched at the end of 2024. The SAUNA QB modules have been installed on the border of Lithuania: SAUNA QB in Kackonys, on the eastern border, two others SAUNA QB modules on the western and southwestern border of Lithuania at Šventoji and Kybartai towns respectively, and the SAUNA III have been sat in Vilnius. Xe isotopes are possible indicators for a nuclear explosion but are also routinely released during nuclear power plant (NPP) operation and from medical isotope production facilities. The network is designed to trace xenon emissions from civil nuclear facilities in neighboring countries. Notably, it includes two VVER1200 type reactors in Belarus, located just 25 km from the Lithuanian border and only 50 km from the capital Vilnius. By now, most often Xe-133 and Xe-131m isotopes are observed, majority of concentration values are in the range from MDC up to 10 mBq/m3 and all detected events are analyzed. The statistical backward evaluation of Xe releases from the Belorussian NPP and other Xe production sources is performed by using HYSPLIT code and employing archived meteorological data.

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