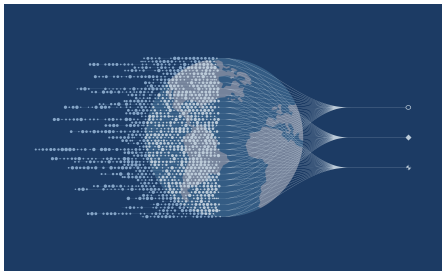

ID: **P3.2-263** Type: **E-poster**

and automatic analysis of radioxenons in beta-gamma spectrum.

In the scope of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), the detection of radioactive xenon by the stations of the International Monitoring System (IMS) is a crucial challenge for the detection and the qualification of nuclear tests. This task is made difficult because of the low activity of these elements present in trace amounts in the atmosphere.
The laboratory is therefore testing a new analysis method for the global beta-gamma spectrum, which allows for the use of all information present in the spectrum. This method has already been tested on a detector in development with a low resolution for photon and a high resolution for electrons. It has proven capable of reducing detection limits for radioxenons of interest. This method is now being tested on the model of one of the low resolution detectors.
The accuracy and precision of the algorithm are evaluated for the quantification of the activities of radioxenons of interest. In addition, characteristic limits (decision thresholds and detection limits) are evaluated and compared to those given by the reference method currently used on the IMS. In addition, a new method for calculating the uncertainty of the radioxenon activities and for an experimental spectrum is presented.

E-mail

hugues.paradis@cea.fr

In-person or online preference

Primary author: Mr PARADIS, Hugues (Commissariat à l'énergie atomique et aux énergies alternatives (CEA))

Co-authors: Mr MANO, Charles-Philippe (Commissariat a l'energie atomique et aux energies alternatives (CEA)); Mr PATRYL, Luc (Commissariat a l'energie atomique et aux energies alternatives (CEA)); Mr GROSS, Philippe (Commissariat à l'énergie atomique et aux énergies alternatives (CEA)); TOPIN, Sylvain (Commissariat à l'énergie atomique et aux énergies alternatives (CEA))

Presenter: Mr PARADIS, Hugues (Commissariat à l'énergie atomique et aux énergies alternatives (CEA))

Session Classification: P3.2 Radionuclide Technologies and Applications

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.2 Radionuclide Technologies and Applications