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Type: **Poster**

of specific historical radionuclide background detections in the IMS

The noble gas component of the IMS has considerably grown and improved since the certification of the first noble gas system. Since then, additional noble gas systems were certified in the IMS and are continuously sampling and measuring radionuclides in the atmosphere. During the operation of these systems, a worldwide radionuclide background originating from civilian facilities has been observed, which is composed especially of Xe-133. This worldwide civilian radionuclide background makes the CTBT verification work of NDCs very challenging. In some regions of the world, the noble gas systems are detecting Xe-133 almost every day. This high radionuclide background is blurring and limiting the detection capability, for CTBT related events, of the noble gas component of the IMS. It is thus crucial to understand the radionuclide background observed by each system as to allow a better discrimination between potentially CTBT related detections and the detections from the civilian background. In this study, the radionuclide background detections at CAX17 are used as a benchmark case to test different alternative approaches to the current use of the operational SRS fields provided by the IDC. These approaches are then applied to specific IMS systems where the radionuclide background sources are not well known.

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