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measurements of radioxenon samples from an IMS station

Laboratory measurements of air samples can be used as a complement to measurements at the IMS station. Such measurements are performed today on a regular basis for the particulate stations within the IMS. Laboratory re-measurements of radioxenon samples, however, are not yet fully implemented in the verification regime. To study the benefits and restrictions for re-measurements of radioxenon samples a comparative study has been performed. During a period of 13 months a total of 91 samples from the station SEX63 has been re-measured at the nearby FOI radioxenon laboratory system. It is shown that laboratory measurement are a valuable tool for further analysis and classification of samples. The radioxenon laboratories can also be used to verify state of health parameters for the IMS systems. At the laboratory measurement parameters can be optimized for detectability of specific radioxenon isotopes. For all radioxenon isotopes, except Xe-135, measurements at the laboratory provides a better sensitivity than at the IMS station up to at least one week after the collection period.

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