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Global radioxenon emission inventory 2014 from all types of nuclear facilities

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The goal of the third ATM challenge is to perform atmospheric transport modelling in order to estimate radioxenon observations at selected IMS stations in the northern hemisphere for an extended period in the year 2014 (June to November). This estimation is needed for calibration and performance assessment of the verification system as described in the Treaty. The best estimates for Xe-133 emissions from known sources is used as input data for this exercise. This presentation summarizes the global radioxenon emissions inventory for the whole year 2014. It comprises all relevant nuclear facilities. For the two strong sources IRE (Belgium) and CRL (Canada) stack release data with a high time resolution are available. For nuclear power plants (NPP) in Europe and the USA the reported release for the whole year are applied in combination with information about their operational schedule. For all other NPPs and for the strongest research reactors sources the best estimates are used. The estimated release of the strongest nuclear research reactors sources is included as well as the annual emissions from the Mallinckrodt facility (The Netherlands), the NIIAR facility (Russia) and the Karpov Institute (Russia).

Promotional text

This presentation summarizes the best estimates of radioxenon emissions from all nuclear facilities in the year 2014. It is a unique data set to be used in studies to enhance data analysis from the noble gas component of the International Monitoring System.

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