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Atmospheric Dispersion of Radioxenon to Kuwait City

In the framework of the International Noble Gas Experiment (INGE), a field measurement campaigns is being carried out in Kuwait Institute for Scientific Research (KISR) to establish the radioxenon baseline data for the Gulf region and to provide assessment in establishing ambient air global noble gas monitoring system of Comprehensive Nuclear Test Ban Treaty Organization (CTBTO). The CTBTO provides KISR with a transportable radioxenon measurement system "the SPALAX detection system" for the campaigns in the state of Kuwait. The SPALAX system is being used to sample and measure the atmospheric concentration of radioxenon isotopes for 133Xe, 135Xe, 133mXe and 131mXe in Kuwait City. The installation and operation was done at the IMS station RN40, on the premises of KISR, and performed in collaboration with the CTBTO. The system started to produce data on 15 May 2012. Both the atmospheric transport Model (ATM) of CTBTO and Hybrid Single Particle Lagrangian (HYSPLIT) trajectory model were used to assess the dispersion of radioxenon to Kuwait-city and attribution of the air mass that influences the gulf region. The atmospheric modeling results for the key isotopes will be presented to add knowledge to the transport of global radioxenon in the gulf region.

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