

Change as Observed by the CTBTO Radionuclide IMS Stations: the Case of Spitzbergen

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The International Monitoring System (IMS), installed and maintained by the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) with the support of States Signatories, is a global system of monitoring stations composed of four complementary technologies: seismic, hydroacoustic, infrasound and radionuclide. One of the IMS radionuclide stations is located in Spitzbergen, a place where, based on many lines of evidence, the signs of climate change are noticeable. Spitzbergen is the largest island of the Norwegian Svalbard archipelago, in the Arctic Ocean. Warming of the atmosphere and oceans has been accompanied by sea level rise and a strong decline in Arctic Sea ice. Among other natural radionuclides, Pb-212 is always observed at IMS stations, in varying quantities, including at the Spitzbergen station RN49. The increase of surface temperature has an influence on the amount of Pb-212 released from the ground surface. This study based on almost twenty years of measurements (2003-2022) by the CTBTO demonstrates that variations of Pb-212 activity concentrations may be connected to climate variations.

E-mail

jolanta.kusmierczyk-michulec@ctbto.org

Promotional text

Could environmental measurements from the IMS network of the CTBTO be used to evidence climate change? Case study of the Spitzbergen station RN49.

Oral preference format

in-person

Primary author: KUSMIERCZYK-MICHULEC, Jolanta (CTBTO Preparatory Commission)

Co-author: Mr BARE, Jonathan (CTBTO Preparatory Commission)

Presenter: KUSMIERCZYK-MICHULEC, Jolanta (CTBTO Preparatory Commission)

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