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investigation on the IMS noble gas stations network coverage: 2015-2019

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This paper evaluates the desirability of noble gas stations network coverage in the International Monitoring System of the CTBTO for the detection of 1 kt nuclear explosions. It was assumed all the 39 noble gas stations become active, the annual average of MDC was used for each certified station and the MDC of Non-Operational Stations was considered 0.24 mBq/m³. In this regard, the daily network coverage of IMS noble gas stations was analysed using SRS fields based on the 14 days backward modeling from 2015 to 2019. The daily, monthly, and annual average of network coverage were calculated and investigated in the form of image pattern and the numerical value corresponding to the global latitude/longitude grid. The results indicated that using the mean coverage over space and time makes some misconceptions, hence the network coverage was evaluated based on an event spatial distribution which provides a real understanding to assess the network coverage for the state parties.

Promotional text

The daily network coverage of IMS noble gas stations was analysis using SRS fields based on the 14 days backward modeling from 2015 to 2019.

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