

Activities of JAEA for CTBT

-Noble gas joint measurement project with CTBT in Horonobe and Mutsu-

【Background and objectives】

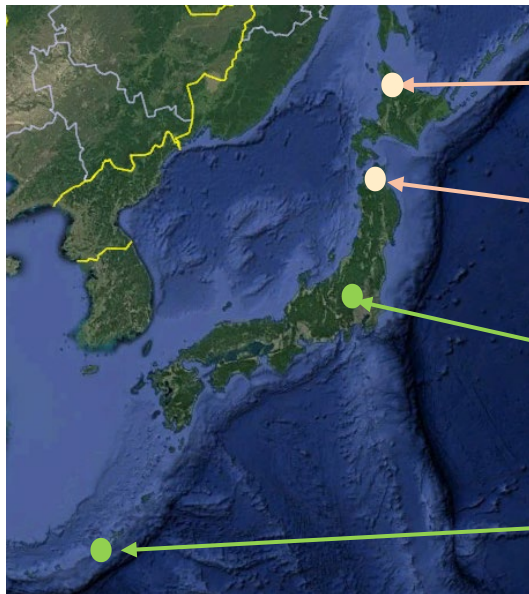
- ❑ In light of repeated North Korean nuclear tests, a resolution encouraging the CTBTO to promote the development of an International Monitoring System (IMS) was adopted by the UN Security Council in 2016. In February 2017, Japanese government contributed funds for the noble gas measurement project to strengthen the CTBTO's nuclear test detection capability.
- ❑ Monitoring from Hokkaido to Tohoku may improve our ability to detect nuclear tests.

【Outline of measurement】

Device : Transportable Xenon Laboratories (TXL)

Place : Horonobe town, Hokkaido, and JAEA Ominato Facility, Aomori

Period : Early 2018 – March 2024 (Planned as of March 2023)



Horonobe town property
[Noble gas] Temporary

JAEA Ominato Facility
[Noble gas] temporary

CTBT Takasaki radionuclide
monitoring station
[Particle/Noble gas] permanent

CTBT Okinawa radionuclide
monitoring station
[Particle] Permanent



TXL Exterior



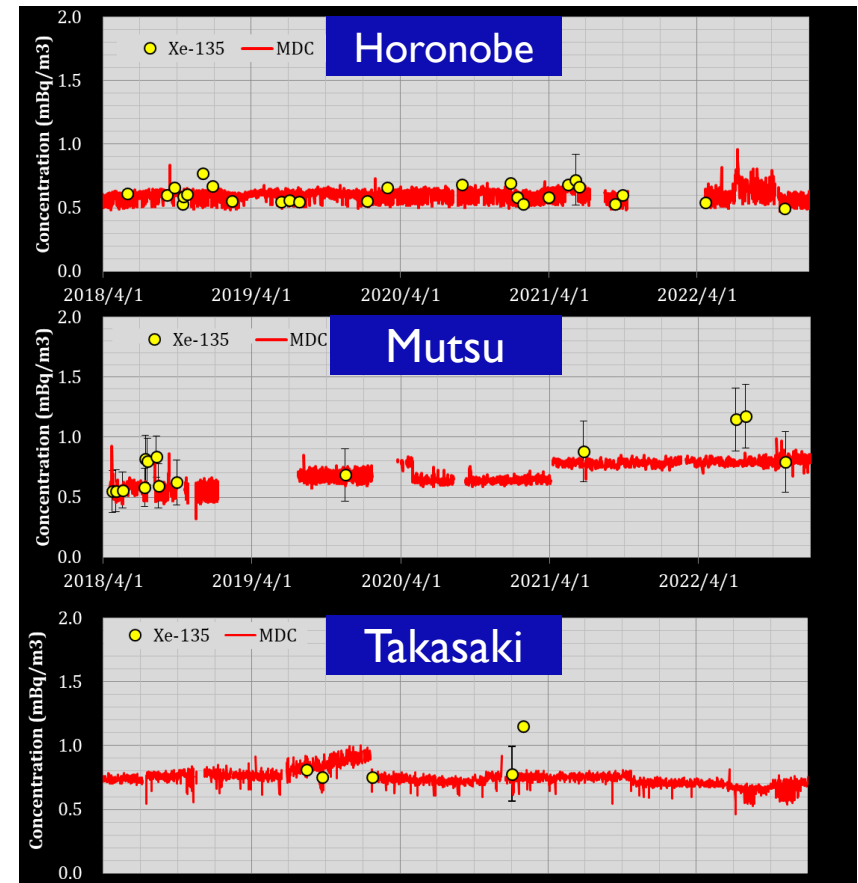
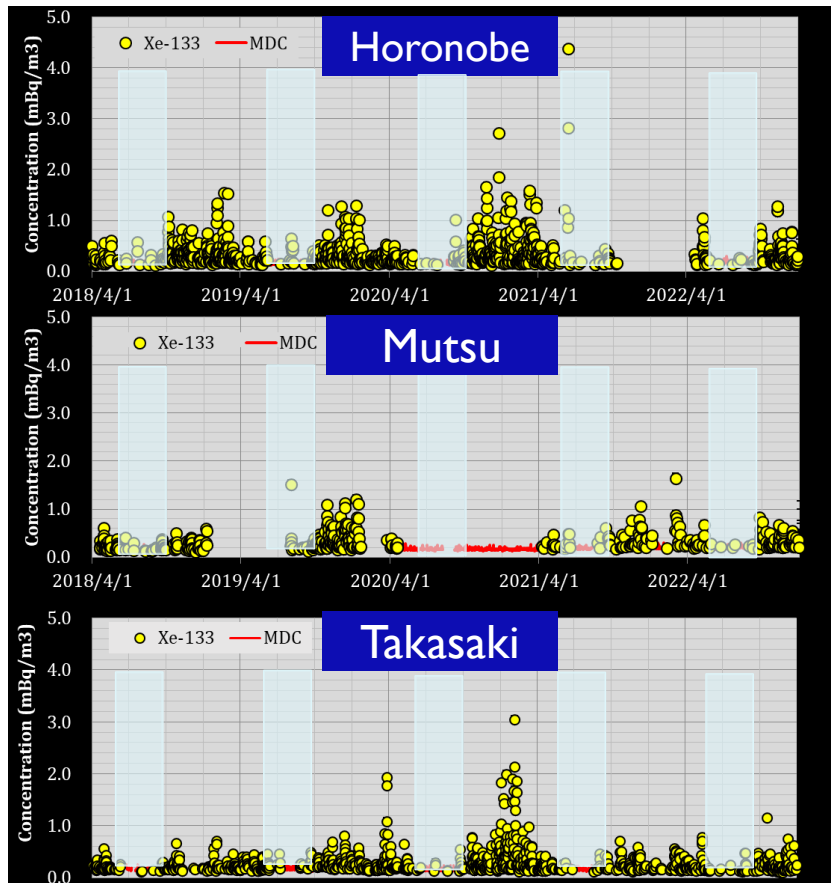
TXL Interior

Locations of CTBT radionuclide monitoring stations and temporary noble gas monitoring stations operated by JAEA

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Time series of air concentration of Xe-133 (left) and Xe-135 (right)



【Results】

MDC: minimum detectable concentration ● : detection over MDC

- Xe-133 : Detections exceeding MDC are frequent at all three stations, tending to be low-frequency from June to September and high-frequency from fall to winter
- Xe-135 : Occasional detections above MDC, but no significant high-concentration detection events