

Infrasound technology as a means for monitoring nuclear explosion and its potential for application to disaster prevention

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Japan Weather Association(JWA) is working as National Data Centre-1(NDC-1) which is in charge of analysis on waveform data, operation and maintenance of infrasound and seismic stations in Japan.

We observed infrasound from underground nuclear test in DPRK two times. It implied that those events were very shallow and shook the surface around epicenter enough to excite infrasound like manmade large underground explosion. Therefore, infrasound observation is important means for monitoring nuclear test not only in atmosphere but also underground.

From the perspective of nuclear test monitoring, it is important for discrimination of the signals from explosion to study the infrasonic signals from a variety of natural phenomena. On the other hand, this kind of studies are also useful for application of infrasound technologies to disaster prevention. We observed infrasound from some eruptions, avalanches and large tsunami at the time of 2011 off the Pacific coast of Tohoku Earthquake. If the signals from such hazardous phenomena can be detected immediately, it will be very helpful to alert the occurrence of disaster or approach of hazardous phenomena. We are challenging to utilize the infrasound technologies as a means for disaster prevention as well as nuclear test monitoring.

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