

## The 3 types of infrasound generated by "The 2018 Hokkaido Eastern Iburi Earthquake"

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The 2018 Hokkaido Eastern Iburi Earthquake (M6.7, focal depth 37 km) occurred on 5<sup>th</sup> September, 2018, 18:07(UTC), recorded seismic intensity 7 around the epicenter. Large strong motions were recorded in most of Hokkaido, in mountains near the epicenter large-scale landslides happened subsequently. I30JP and I45RU deployed for the nuclear test monitoring regime of CTBT were observed the waveforms, these analyses are corresponded to the azimuth of the epicenter and these wave chains have about 20 minutes interval respectively.

The 3 types infrasound generated by large earthquakes is reported by past many studies. The 1<sup>st</sup> observations of infrasound from earthquakes are identified as infrasound from vertical ground motion associated with local Rayleigh waves in both microbarometer and co-located broad-band seismogram at the same time, which were recorded very correlated signals of about 20 periods at I45RU and USRK deployed for seismic monitoring regime of CTBT. The 2<sup>nd</sup> observations of infrasound are identified as infrasound generated by the sudden strong vertical motion near the epicenter, for the earthquake, these analyses from I30JP and I45RU are corresponded to the azimuth of the epicenter, the assumption of propagation between stratosphere and surface are not conflicted with the observed time. The 3<sup>rd</sup> observations of infrasound are identified as infrasound generated in regions far from the epicenter by the interaction of surface waves with topographic features, such as mountains, for the earthquake, azimuths of these analyses from I30JP and I45RU have variations (+-10 degrees) directed toward the whole Hokkaido island, and the assumption described before is not also conflicted with the observed time. In the poster presentation, we present features of the observed waveform, dominant frequency, amplitude and observed interval for the infrasound and seismic records. Furthermore, we present the result of the analysis about azimuth, speed and observed time, in addition to sound origin specification and propagation transmission.

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