A source identification in the coastal and marine environment inferred from infrasound observations in the Lützow-Holm Bay, East Antarctica

Physical interaction between Solid Earth & Atmosphere – Ocean – Cryosphere System

Comprehensive Nuclear Test-Ban Treaty Organization (CTBTO)

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Infrasound signals observed at SYO (2013/02/14)

Occurrence rate (%) of the detected predominant signals at SYO from 10 February to 31 March (a)

Conclusion

- Characteristic features of the infrasound waves are demonstrated by the array stations at Syowa Station (SYO), the Lützow-Holm Bay (LHB), East Antarctica, on the basis of newly retrieved data from January 2010. The established infrasound arrays in LHB clearly detected temporal variations and frequency characteristics as propagating directions of the infrasound from Southern Ocean. Microbarometer measurements are a useful tool for characterizing ocean waves, climate, complementing other seismographic and geophysical data in the Antarctic.

- Moreover, several kinds of infrasonic waves are introduced, including regional atmospheric, local signals with high-frequency ranges, as well as the low-source propagation from the surface of marine upwellings and the continental shelf. High and continuous monitoring of infrasonic wave energy in Antarctica is a new proxy for monitoring regional environmental change together with temperature climate variations in polar regions.