

T1.1-P02. A source identification in the coastal and marine environment inferred from infrasound array observations in the Lützow-Holm Bay, East Antarctica

Characteristic features of infrasound waves observed at Antarctica reveal physical interaction involving surface environments in the continent and Southern Ocean. A single infrasound sensor has been continuously recorded since 2008 at Syowa Station (SYO; 39E, 69S), the Lützow-Holm Bay (LHB), East Antarctica. The recording data clearly represent background oceanic signals (microbaroms) during whole seasons. In austral summer in 2013, several field stations are established along the coast of LHB. Two infrasound arrays with different diameter triangles are installed at both SYO (100 m spacing) and on continental ice sheet (1000 m spacing). Besides the arrays, isolated single stations are deployed at two outcrops. The new arrays clearly identified the predominant propagating directions in NWN and their frequency content variations of microbaroms from Southern Ocean. Microbaroms measurement is a useful tool for characterizing ocean wave climate, complementing other oceanographic and geophysical data in the Antarctic. Moreover, characteristic signals are demonstrated, such as regional earthquakes, the airburst shock waves generated from meteoroid injection at the Russian Republic on February 2013. Detail and continuous observations of infrasound waves in Antarctica is a new proxy for monitoring a environmental changes such as global warming affecting on polar regions.

Primary author: KANAO, Masaki (National Institute of Polar Research)

Presenter: KANAO, Masaki (National Institute of Polar Research)

Track Classification: 1. The Earth as a complex system