

南極のインフラサウンドデータでみられる各種波動の特徴について Characteristic features of infrasound waves observed at Antarctica

金尾 政紀^{1*}; 村山 貴彦²; 山本 真行³; 石原 吉明⁴; 柿並 義宏³; 岡田 和見⁵; 松島 健⁶
KANAOKI, Masaki^{1*}; MURAYAMA, Takahiko²; YAMAMOTO, Masa-yuki³; ISHIHARA, Yoshiaki⁴; KAKINAMI, Yoshihiro³
; OKADA, Kazumi⁵; MATSUSHIMA, Takeshi⁶

¹ 国立極地研究所, ² 日本気象協会, ³ 高知工科大学, ⁴ 宇宙航空研究開発機構, ⁵ 北海道大学, ⁶ 九州大学
¹National Institute of Polar Research, ²Japan Weather Association, ³Kochi University of Technology, ⁴Japan Aerospace Exploration Agency, ⁵Hokkaido University, ⁶Kyushu University

Characteristic features of infrasound waves observed at Antarctica reveal the physical interaction involving surface environmental variations in the continent and surrounding Southern Oceans. A single infrasound sensor has been continuously recorded since 2008 at Syowa Station (SYO; 39E, 69S), the Lutzow-Holm Bay (LHB), East Antarctica. The continuously recording data clearly represent a contamination of the background oceanic signals (microbaroms) during whole seasons. In austral summer in 2013, several field stations by infrasound sensors are established along the coast of the LHB. Two infrasound arrays with different diameter size are installed at both SYO (by 100 m spacing triangle) and S16 area on continental ice sheet (by 1000 m spacing triangle). Besides these arrays, two isolated single stations are deployed at two outcrops in LHB. These newly established arrays clearly detected the propagating directions and frequency contents of the microbaroms from Southern Ocean. Microbaroms measurements are a useful tool for characterizing ocean wave climate, complementing other oceanographic and geophysical data in the Antarctic. Moreover, several kind of remarkable infrasound signals are demonstrated, such as regional earthquakes, together with a detection of the airburst shock waves generated from meteorite injection at the Russian Republic on 15 February 2013. Detail and continuous measurements of the infrasound waves in Antarctica could be a new proxy for monitoring a regional environmental change as well as temporal climate variations in high southern latitude.

キーワード: infrasound, array observations, Lutzow-Holm Bay, East Antarctica, microbaroms, surface environment
Keywords: infrasound, array observations, Lutzow-Holm Bay, East Antarctica, microbaroms, surface environment