

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

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SSS027-07

会場:105

時間:5月22日 12:15-12:30

南極・昭和基地の脈動と微気圧変動からみた大気-海洋-固体地球相互作用 ATMOSPHERE - OCEAN - SOLID EARTH INTERACTION FROM MICROSEISMS AND MICROBAROMS AT SYOWA STATION, ANTARCTICA

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Microseisms and microbaroms originated from the Southern Ocean are clearly recorded by both the broadband seismograph and infrasound sensor deployed at Syowa Station (39E, 69S), East Antarctica. A continuous image is achieved for the double-frequency microseism / microbaroms (DFM) with peaks between 4 and 10 s during a whole season. The peak amplitudes of DFM reflect the large influence of winter extratropical cyclonic storms (brizzard) in the Southern Ocean. The DFM have relatively lower amplitudes during austral winters, caused by the larger amount of sea ice extent around the Lutzow-Holm Bay with decreasing the ocean wave loading effects. On the contrary, single-frequency microseism (SFM, with periods between 12 and 30 s) can be observed only by seismograph under excellent storm conditions particularly in local winter. On the infrasound data, moreover, long stand signals are identified with harmonic over tones at a few Hz to lower most human audible band. It probably related to the ice vibrations in the vicinity of the Station. Microseism measurements are a useful proxy for characterizing ocean wave climate and global storm intensity, complementing other estimates by ocean buoys or satellite measurements. A continuous monitoring both by broadband seismograph and infrasound observations firmly contribute to the Federation of Digital Seismographic Network (FDSN) and the Comprehensive Nuclear-Test-Ban Treaty (CTBTO) in southern high latitude, together with the Pan-Antarctic Observations System (PANTOS) under the Scientific Committee on Antarctic Research (SCAR).

キーワード: 昭和基地, 脈動, 微気圧変動, 海洋気候, 大気海洋固体地球システム

Keywords: Syowa Station, Microseismic Noise, Infrasound Microbaroms, ocean wave climate, atmosphere-ocean-solid earth system