

of Infrasound Sources using Array Data from 2019 to 2021 Deployed at the Lützow-Holm Bay Region, Antarctica

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Time-space variations of infrasound source locations from 2019 to 2021 were studied using a combination of two local arrays in the Lützow-Holm Bay (LHB), Antarctica. The local arrays deployed at two outcrops clearly detected temporal variations in frequency content as well as propagating directions during the three years. A large number of infrasound sources were detected and many of them located in N-NW directions from the arrays. These source events were generated within the Southern Indian Ocean to the northern part of LHB with frequency content of a few seconds; that is the microbaroms from oceanic swells. From austral summer to fall season, many infrasound sources orientation are determined to be north-eastward direction. These sources might be related to the effect of katabatic winds of the continental coastal area. Furthermore, several sporadic infrasound events during winter seasons had predominant frequency content of a few Hz, which are clearly higher than microbaroms. On the basis of a comparison with sea-ice and glacier distribution from MODIS satellite images, these high frequency sources were considered to be cryoseismic signals associated with cryosphere dynamics. In this regard, infrasound could be a useful tool to monitor surface environment involving climate change in the coastal area of Antarctica.

E-mail

kanao@nipr.ac.jp

Promotional text

Masaki Kanao

Oral preference format

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

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

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