

Seismic observations at Syowa Station and surrounding region of Antarctica - Science targets and data management for long-term monitoring -

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Seismic observations at Syowa Station (SYO), East Antarctica started since 1967 on the era of the International Geophysical Year (1957-1958). Based on the development of telecommunication links between Antarctica, digital data have been transmitted to the National Institute of Polar Research (NIPR) for the main purpose of phase identification of the teleseismic events. Arrival times of the detected phases have been reported to the International Seismological Centre (ISC), and published as the "JARE Data Reports" from NIPR. Recorded teleseismic and local seismic signals have sufficient quality for conducting many kinds of research analyses in terms of dynamics and structure of the Earth's as viewed from Antarctica. In particular, a long-term detection of teleseismic events, as well as characteristic local cryoseismic signals have been especially demonstrated associated with surface variations in the Antarctic Plate and continental margins of the continent. In addition, by combining the other deployed array on continental ice sheet, a significant number of characteristic cryoseismic signals (discharge of sea-ice, icebergs, calving events of ice sheet, etc.) have been detected as resultant events caused by surface environmental variations. In this presentation, scientific targets, recent achievements and data management for long-term seismic observations will be presented, in particular focused on the area nearby SYO conducted Japanese activities.