

Developing Plans for Seismic Deployments in Eurasian Arctic Region at International Polar Year

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Existing permanent seismic stations allows resolution of the structure beneath Arctic area is sufficient to detect fundamental differences in the lithosphere beneath continental and oceanic area, however, not to clearly define the structure within each terrains. In addition, seismicity around the Arctic area is limited by the sparse station distribution and the detection level for earthquakes remains inadequate for full evaluation of tectonic activity. Our proposed program of the Seismic Deployments in Russian Arctic Region aims to improve seismic instrumentation on and around the high latitude area. Our Seismic Deployments have the following three components. Temporary Broadband observations at Baikal Rift Zone; Continuous digital recording by portable broadband seismometer have been carried out from 2004 January, in order to investigate the deep structure and tectonic evolution of Shiberian Craton - Baikal Rift Zone (BRZ) by seismic waveform analyses. The observation period will continue about two years, then at IPY period we are going to make an advanced analysis combined with the global dataset surrounding the BRZ and Siberia. Outreach of the Permanent Broadband Station; Existing stations of the Federation of Digital Seismographic Network (FDSN) should be supplemented by instrument specification with Global Seismological Network (GSN) in high latitude of the Arctic area. Technological advances in power supplies and real-time data transmission for remote stations, as well as significant logistical support, are fully required. Our plan is to make an outreach to establish a permanent station in the Russian Arctic area in order to offer the obtained data to FDSN in future. Deep seismic exploration at Magadan - Kolymsoe region; To reveal the deep structure and conversion tectonics of Far East Region, Russia, deep seismic exploration have been conducted from 2004 summer for a period of few years including IPY season. Temporary data acquisition of the deep exploration seismic shots / vibrator will be made by both Japanese and Russian related seismologists.