



Session 16

Seismological studies in Polar Regions and the Cryosphere

Conveners:

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The Polar Regions attract increased scientific, social and economic attention, holding special significance as regions strained the most by the consequences of climate change. Unanswered questions on their tectonic evolution, implications of natural resources and the UN Law of the Sea Treaty stimulate further interest in them. Seismological challenges in the Polar Regions comprise the origin and properties of intraplate seismicity, the mechanisms of ultraslow seafloor spreading, the structure and dynamics of aseismic ridges and subglacial cratons and orogens, the role of glacial rebound in seismicity triggering, seismogenic glacier sliding and iceberg production, and the exploration for oil and gas. As an imaging tool both in depth and on the surface, apart from revealing the Earth's structure, seismology contributes to studies of paleoclimate and ice and permafrost structure. Seismology has also proven itself as an effective instrument to study ice dynamics and monitor glacier-related natural hazards. The rich cryo-seismological wavefield provides unrivalled insights into the subglacial environment including rapid basal sliding and hydraulic processes, as well as the mechanics of iceberg detachment and crevassing.

We invite submissions on seismology in the Polar regions and glaciated environments with temperate climates. All seismological topics are welcome, including monitoring and analysis of seismicity (tectonic and cryogenic) and related hazards, near-surface processes, studies of recent larger seismic events, seismotectonics and seismic imaging of crustal and mantle structure. We welcome contributions on recent research results and their interpretation, and on passive and active experiments under the special conditions of the polar environment and mountain glaciers.