

Progress in Cryoseismology

Call for Papers

The International Glaciological Society (IGS) will publish a special issue of the *Annals of Glaciology* with the theme “Progress in Cryoseismology”. The issue will be part of *Annals* Volume 60 and will be issue number 79. Papers accepted for publication will be published immediately on the Cambridge University Press (CUP) website, and a final printed version will be available in mid to late 2019.

The special issue will be edited by Chief Editor Fabian Walter (ETH) and associate Scientific Editors Doug MacAyeal (U. Chicago), Vera Schlindwein (Alfred Wegner Institut), Paul Winberry (Central Washington University), Brad Lipovsky (Harvard), Tim Bartholomaeus (University of Idaho), Julien Chaput (Colorado State), Doug Wiens (Washington University in St. Louis), Rick Aster (Colorado State) and Sridhar Anandakrishnan (Pennsylvania State University). More will be added as required.

- 1 April 2018 – paper submission opens
- 1 January 2019 – deadline for submitting a manuscript for this *Annals*.
- 1 March 2019 – deadline for final drafts of accepted papers. Authors are expected to respond to galley proofs shortly thereafter.
- Manuscripts accepted before these deadlines will be published on line immediately.

The issue is intended to compliment relevant sessions held at EGU, AGU and elsewhere over the 2018/19 period.

Theme

Various glaciological processes generate elastic waves, and hence seismology has been shedding light on numerous phenomena in the cryosphere. However, with the advent of more portable instrumentation, modern time series analysis and numerical modelling tools, the number of studies on the interdisciplinary connections between seismology and glaciology has rapidly increased, producing more scientific papers in the last decade than in the previous sixty years. Similarly, conference sessions and workshops dedicated to the field of cryoseismology have been held on a yearly basis and attracted attention of earth scientists at all career-levels.

The story of cryoseismology testifies to success of interdisciplinary research: On one hand, glaciological studies provide seismologists with interesting “exotic” seismic sources, which distinguish themselves from common tectonic faulting events. On the other hand, seismology has been offering a set of innovative tools for studying iceberg calving, glacier sliding, subglacial water flow and other aspects of glaciology, which are usually hidden from conventional measurements.

Given the rapid developments in cryoseismology, it is becoming more and more difficult to host this field as a sub-discipline of either seismology or glaciology. Instead, a new earth science sub-discipline and scientific community is emerging, whose progress should best be published in dedicated journal series.

This special issue in the *Annals of Glaciology* aims to cater to this need by

- Presenting and/or reviewing recent discoveries on seismogenic processes and elastic wave propagation in glaciers and ice sheets;
- Presenting and evaluating new tools to mine cryoseismic data sets

The scope of this special issue focuses on passive seismology, but active firn, ice, and near sub-glacial experiments are welcome.

Topics of interest are:

1. Seismogenic processes generated at the ice-ocean interface, such as iceberg calving, rifting and water flow beneath ice sheets and ice shelves.
2. Seismicity of basal sliding
3. Seismic signals of crevassing, fracturing and failure
4. Seismic noise in the cryosphere
5. Numerical models of cryoseismic sources
6. Using passively acquired seismic signals to study ice structure and changes thereof
7. Sea ice seismicity
8. Hydrofracturing in glacial ice
9. Water tremor in glaciers and ice sheets
10. Novel approaches for detection, location and monitoring of cryoseismic sources
11. Automated processing of cryoseismic records
12. Instrumentation and measurement approaches

Other relevant topic suggestions are welcome. If you have such a suggestion or if you have any questions about the suitability of your paper for this *Annals* issue, please contact the Chief Editor or one of the associate Scientific Editors.