



INTERNATIONAL GLACIOLOGICAL SOCIETY

International Symposium on

Five Decades of Radioglaciology



**IGS 2019**

**Five Decades of  
Radioglaciology**

Stanford University  
Stanford, California, USA  
16–21 June 2019

FIRST CIRCULAR  
December 2017

<http://www.igsoc.org/symposia/2019/stanford>

The International Glaciological Society will hold an International Symposium on 'Five Decades of Radioglaciology' in 2019. The symposium will be held at Stanford University in Stanford, California, USA on 16–21 June 2019

## THEME

Radio echo sounding is a powerful geophysical approach for directly characterizing the subsurface conditions of terrestrial and planetary ice masses at the local, regional and global scales. As a result, a wide array of orbital, airborne, towed and in situ instruments, platforms and data analysis approaches for radar sounding have been developed, applied or proposed. Terrestrially, airborne radar sounding data has been used in glaciology to observe ice thickness, basal topography, englacial layers and for more than five decades. More recently, it has also been exploited to estimate the extent and configuration of subglacial water, the ice sheet surface, the geometry of subglacial bedforms, the spatial variation of melt, temperature, and the transition between frozen and thawed bed. Planetary radar sounders have been used or are planned to observe the subsurface and near-surface conditions of Mars, Earth's Moon, comets and the icy moons of Jupiter. These instruments provide critical subsurface context for surface sensing, particle, and potential-field instruments in planetary exploration payloads. This symposium will discuss advances in radar sounding systems, mission concepts, signal processing, data analysis, modeling and scientific interpretation.

## SUGGESTED TOPICS

We seek papers and presentations that advance the understanding of radar sounding and its use in physical glaciology. Key focus areas include (but are not limited to):

1. **Radar systems:** development, performance and platforms
2. **Data:** intercomparison, validation and release
3. **Radar processing:** propagation, inversion and automation
4. **Englacial structure:** layers, deformation and accretion bodies
5. **Attenuation:** near surface properties, temperature and chemistry
6. **Bed conditions:** topography, roughness, thermal state and hydrology
7. **Interpretation:** comparing observations with modeling and theory.

## PROGRAM

True to tradition, the symposium will include oral and poster sessions interlaced with ample free time to facilitate interactions between the participants. Additional activities include an opening icebreaker, a banquet dinner and an excursion during the mid-symposium afternoon break.

## ABSTRACT AND PAPER PUBLICATION

Participants who wish to present a paper (oral or poster) at the Symposium will be required to submit an abstract by 1 February 2019. Accepted abstracts will be posted on the Symposium's website. The Council of the International Glaciological Society will publish a thematic issue of the *Annals of Glaciology* on topics consistent with the Symposium themes. Participants are encouraged to submit manuscripts for this *Annals* volume.

## SYMPOSIUM ORGANIZATION

Magnús Már Magnússon (International Glaciological Society).

## SCIENCE STEERING AND EDITORIAL COMMITTEE

Dustin Schroeder (Stanford University; Chair), Rob Bingham (University of Edinburgh), Don Blankenship (University of Texas Institute for Geophysics), Knut Christiansen (University of Washington), Olaf Eisen (Alfred Wegener Institute), Gwenn Flowers (Simon Fraser University), Nanna Karlsson (Geological Survey of Denmark and Greenland), Ala Khazendar (Jet Propulsion Laboratory), Jonathan Kingslake (Columbia University), Michelle Koutnick (University of Washington), John Paden (CREStS), Jérémie Mouginot (University of California Irvine), Martin Siegert (Imperial College London).

## LOCAL ORGANIZING COMMITTEE

Dustin Schroeder (Chair), Davide Castelletti (Stanford), Winnie Chu (Stanford), Thomas Jordan (Stanford), Liliane Pereira (Stanford), Matthew Siegfried (Stanford).

## VENUE

Stanford University is one of the world's leading research universities. It is known for its entrepreneurial character, drawn from the legacy of its founders, Jane and Leland Stanford, and its relationship to Silicon Valley. Areas of excellence range from the humanities to social sciences to engineering and the sciences. Stanford is located in California's Bay Area, one of the most intellectually dynamic and culturally diverse areas of the USA.

## LOCATION

Stanford and the adjacent city of Palo Alto are less than an hour (by car or train) from the city of San Francisco, less than an hour from beaches in Santa Cruz or Half Moon Bay, less than two hours from the wine regions of Napa and Sonoma, and less than four hours from National Parks in Yosemite or Lake Tahoe. With June weather averaging highs of 78° and lows of 52°F (26° and 11°C), 0.08 in (2 mm) of precipitation, and numerous pedestrian and bike paths along the bay and in the hills, the greater Palo Alto area is ideal for hiking, biking and other outdoor activities. The 8000 acre (32.375 km<sup>2</sup>) campus is a few blocks away from the suburban garage where Hewlett and Packard created their audio oscillator, cited as the 'birthplace of Silicon Valley' in the national register of historic places. The region is also home to the headquarters of Apple, Google, Facebook, Netflix, Cisco, Adobe, Intel, Tesla, Uber and numerous other companies and startups pushing the frontiers of scientific and technological innovation.

## FURTHER INFORMATION

If you wish to attend the symposium, please register your interest online at

<http://www.igsoc.org/symposia/2019/stanford/>

The Second Circular will give further information about accommodation, the scientific programme, additional activities, preparation of abstracts and final papers. Members of the International Glaciological Society, as well as all those who have pre-registered, will automatically receive notification of the Second Circular.

Information will also be updated on the IGS conference website, <http://www.igsoc.org/symposia/2019/stanford/> as it becomes available. A local website will open later in 2018.