

## Conveners

Jon Ove Hagen (IASC/WAG)  
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## Location

Pushkin Hall  
Pribaltiyskaya Hotel  
14 Korablestroiteley St.  
St. Petersburg  
Russia

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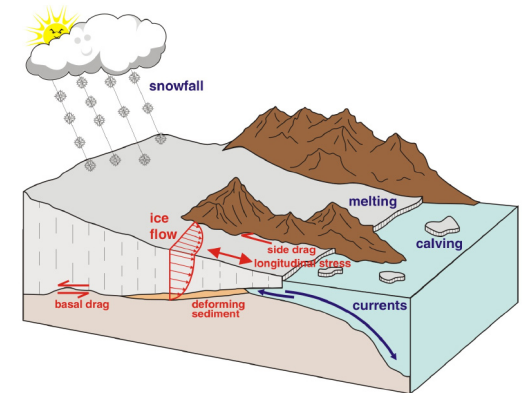
**Details on Workshop registration will be provided in the Second Circular and at:**  
<http://www.scar.org/researchgroups/physicalscience/ismass.html>

**Further information on the SCAR Open Science Conference can be found at:**  
<http://www.scar-iasc-ipy2008.org/>

*workshop on*

# Improving Ice Sheet Models

St. Petersburg, Russia • July 5-7, 2008



## First Circular

December 2007



## Rationale

Recognising the importance of ice sheets in controlling global sea level, and the inadequacies in current efforts to model the disintegration of ice sheets in response to a warming climate, a Workshop is considered timely to develop a community strategy on how best to (i) improve the physical understanding of ice sheet processes responsible for rapid change; (ii) incorporate improved physical understanding into numerical models; (iii) assimilate appropriate data into the models for calibration and validation; and (iv) develop prognostic whole ice-sheet models that better incorporate non-linear ice-sheet response to environmental forcings (such as change in surface mass balance, loss of buttressing from floating ice shelves and ice tongues, and rising sea level).

## Format

The Workshop is scheduled immediately prior to the SCAR/IASC Open Science Conference, St. Petersburg, Russia, and will involve one day of invited presentations, followed by discussions and writing in break-out groups on the second day, and concluding with half a day of plenary discussions. We anticipate bringing together some 50 participants from diverse disciplines including glaciology, high-latitude oceanography and meteorology, geophysics, representing both modelling and observational communities.

We have identified **five research focus areas** for which understanding is currently lacking but that are crucial to include in ice-sheet models:

**Englacial:** interaction between ice-marginal processes and discharge from the interior through upstream transmission of longitudinal stress perturbations.

**Ice shelves:** environmental controls on ice-shelf collapse and controls on iceberg calving.

**Subglacial geology and hydrology:** geologic and topographic controls on fast glacier flow, and the role of subglacial water on glacier discharge.

**Surface mass balance:** controls on accumulation and ablation.

**Numerical issues:** implementing small-scale processes into whole ice sheet numerical models.

For each focus area, one or two speakers will be invited to present an overview of the current status of understanding, and who will lead discussions and writing in the corresponding break-out groups. Prior to the Workshop, a set of “Questions and Talking Points” will be distributed to participants to guide and focus the break-out sessions, so as to optimize the limited time available.

## End Product

The aim is to produce a Science Plan for a joint SCAR/IASC/CliC programme outlining research and observational strategies over the next 5 years (July 2008-2013), building on existing research groups as appropriate. Focus will be on both the Greenland and Antarctic ice sheets, and their most dynamical components, and therefore the proposed programme would among other things replace SCAR’s present ISMASS group (which has a strict Antarctic focus). The plan will be published as a Joint SCAR/IASC report in the SCAR and IASC Report Series. The first draft of the science plan should be completed during the meeting, distributed for community comment by September 2008, and finalized by November 2008.

## Partnerships

The workshop will be led jointly by SCAR (ISMASS) and IASC (WAG), in partnership with the WCRP’s CliC programme and CReSIS, and involving other relevant programmes, agencies and institutions.

