Postdoctoral or PhD position available: Ice-sheet modelling and coupling to mass-balance models, University of Lapland, Finland

A 3-year research position (postdoc or PhD) is available at the University of Lapland, Rovaniemi, Finland in collaboration with the Computer Science Centre in Helsinki, Finland as well as the Universities of Oslo, Norway and Uppsala, Sweden.
The candidate will work on the topic “Coupled climate and ice dynamics of the Nordaustlandet ice caps” within the Nordic Centre of Excellence “SVALI” (www.ncoesvali. org).

Starting date is as soon as possible upon agreement.

The PhD (or Postdoc) will be supervised by Prof. John Moore (Arctic Centre; BNU, Beijing, China). The position will be located at the Arctic Centre, Rovaniemi and guided by Dr. Martina Schäfer with support from CSC (Dr. Thomas Zwinger).
The position will involve a longer stay in Oslo (Dr. Thomas Schuler) and shorter stay(s) in Uppsala (Dr. Björn Claremar) as well as Espoo (Dr. Thomas Zwinger).
Based on the performance of the candidate, an extension for a 4th year in the case of a PhD on external funds is possible. The possibility is given to enrich the curriculum through the SVALI graduate school.
Annual salary during the 3 years financed through SVALI including usual social benefits will be according to the University of Lapland salary-system depending on the experience of the candidate.
The PhD degree will be awarded from the University of Oulu (Finland) or Helsinki (Finland).

Objectives and main tasks:
Three- year position as part of the SVALI Nordic Centre of Excellence.
The task is to model dynamics of the Nordaustlandet ice caps in Svalbard using the finite element suite ELMER developed at the CSC, Espoo. This Full Stokes ice-flow model will be applied to the Austfonna ice cap, similar to an already existing application for Vestfonna. Coupling between the ice flow and mass balance models will be required, prognostic runs for scenarios of future climate performed.
In a latter step, CFD simulations of blowing snow, driven by down-scaled climate data to improve the mass-balance distribution may be conducted (optional).

The Top-level Research Initiative:
The position is announced as a part of the project "Stability and Variations of Arctic Land Ice" (SVALI) under the Top-level Research Initiative (TRI, http://www.toppforskningsinitiativet.org) which is a major Nordic collaborative venture for studies of climate, energy and the environment. SVALI is a Nordic Centre of Excellence within the TRI sub-programme "Interaction between Climate Change and the Cryosphere" (ICCC) which aims to improve our understanding of stability, variations and dynamics of the cryosphere.

The general aims of SVALI are: to quantify the current and future melt-rate of land-based ice in the Arctic and North-Atlantic region, to assess the consequences of decreasing land ice volume on sea level and ocean circulation, and to assess the societal consequences of current and future glacier variations. SVALI positions are

announced internationally by open calls. An important element of the TRI programme is to enhance mobility of scientists within the Nordic countries and internationally. When candidates are regarded as having similar scientific qualifications, the candidate from another country than the institution making the call will be given priority.

Applications:
Candidates should have a recent Master or PhD in cryospheric sciences, geo-sciences, applied mathematics, physics, computational fluid and/or solid dynamics, or a related field with a strong background in continuum mechanics. Experience in Unix/Linux, C++, Fortran and Matlab or similar high-level scripting languages is highly desirable. Excellent written and spoken English is a basic requirement. Close cooperation is required with different groups, demanding that the candidate will spend some time at associated institutions. This means that the person should be free to spend time in several locations.

An application consists of a cover letter describing your interest in the position, a CV and contact details of three referees (telephone numbers and email address) sent as pdf-files by email to John Moore (john.moore.bnu@gmail.com). Review of applications will continue until the position is filled.