The Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia seeks a PhD student for a project entitled 'Energy-balance models for glacier mass changes on regional scales'. The position will be based in Vancouver, BC, Canada.

Goal:
The aim of this PhD project is to directly contribute to simulations of glaciers and ice caps in a changing climate. The glaciology group at UBC aims to model changes in these ice masses at regional and global scales, and to narrow the uncertainties in projections of sea level rise due to changing land ice volumes. The PhD project will address the following: Can an energy-balance model (which incorporates all energy and mass exchange mechanisms at the glacier surface) successfully simulate the surface mass balance of glaciers in different climatic settings? Can mesoscale climate models be used to force the energy-balance model on regional scales? These work will initially focus on mountain glaciers in western Canada, but is planned to be applicable globally.

Methodology:
A physically-based surface mass balance model, accounting for all components of energy balance at the ice surface will be developed for all glaciers of Western Canada (British Columbia, Alberta, Yukon). The first step will be to design and calibrate the model, and validate its performance against data from a number of field sites. The PhD candidate will actively participate in field work, installing and maintaining of automatic weather stations at two glaciers in BC. All standard surface meteorological variables, all components of radiation balance as well as turbulent fluxes and glacier surface changes will be monitored using state-of-the-art equipment. Data from two additional sites in the Yukon Territory will be available through a collaboration with the glaciology group at Simon Fraser University. The robustness of the model to changes in location and time will be investigated, using both field data as well as climate reanalysis data downscaled using a state-of-the-art mesoscale climate (Weather Research Forecast) model.

Requirements:
Priority will be given to candidates who will have obtained an M.Sc. degree or equivalent in engineering or physical science by September 2013. Specialization in glaciology is advantageous but not necessary. The applicant should be familiar with a programming language (e.g. Matlab, Fortran). A background in numerical modelling, instrumentation and/or field research is an asset.

Applications will be reviewed upon receipt, and accepted until 31 Jan 2013 or until the position is filled.

UBC hires on the basis of merit and is committed to employment equity. All qualified persons are encouraged to apply. We especially welcome applications from members of visible minority groups, women, Aboriginal persons, persons with disabilities, persons of minority sexual orientations and gender identities, and others with the skills and knowledge to engage productively with diverse communities. Canadians and permanent residents of Canada will be given priority.

Information on the application specifics is available at:
http://www.eos.ubc.ca/academic/graduate/application-process.html

For more information or to express interest in the position, contact:
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