

Two PDRA positions on marine ice stream modelling and glacial geomorphology

Two NERC-funded PDRA positions on marine ice stream modelling and glacial geomorphology

The Department of Geography at Durham University seeks to appoint two post-doctoral research associates to work on a NERC-funded research project entitled 'Understanding marine ice stream retreat using numerical modelling and geophysical data'. The overall aim of this project is to determine the factors and processes that control the retreat of marine-based ice streams by integrating and comparing marine-geophysical observations of palaeo-ice streams in Antarctica with results from a numerical model that includes grounding-line motion. This aim will be achieved through a detailed mapping and characterisation of the bed of three Antarctic palaeo-ice streams and through the further development and application of a numerical ice stream flow model in order to simulate ice stream and grounding line retreat and compare it to the observed retreat pattern.

The overall project is led by Dr A. Vieli, Dr C. Stokes and Prof C. O'Cofaigh from Durham University in collaboration with Dr C.-D. Hillenbrand from the British Antarctic Survey and will employ two post-doctoral research associates. The first (PDRA 1) will be employed for 15 months and will address the geophysical mapping, data collection and analysis. The second (PDRA 2) will be employed for 30 months and will perform the numerical modelling work. A more detailed description of the two PDRA posts is found below or on the Durham University job website (<https://jobs.dur.ac.uk/default.asp>).

Job Description PDRA 1 (Ref: 3547)

Duration: 15 month

Salary: £29,704 per annum

Grade: Grade 7

Contract: Fixed-term, Full-time

Hours: Nominally 35 hours per week

Job Summary and Purpose:

We are seeking to appoint a post-doctoral research associate for 15 months, from January 2010, to work on the reconstruction of ice stream history and dynamics on millennial timescales from glacial geomorphology. The successful candidate will have been awarded (or have recently submitted) a PhD on a related research area, and will have proven expertise in ice sheet reconstruction and geomorphological mapping. You will be responsible for: 1) detailed mapping and analysis of existing marine geophysical datasets such as swath bathymetry data; 2) the extraction of boundary conditions for the numerical model; and 3) the collation of published and newly available data to help constrain the numerical model (e.g. retreat history, relative sea level history, climate forcing, etc.). Experience of ice sheet reconstruction from glacial geomorphological data is essential as is experience with appropriate relevant software for the manipulation and analysis of marine geophysical and glacial geomorphological datasets (e.g., ARC-GIS, GMT, NEPTUNE). Some basic understanding of numerical modelling and programming packages such as Matlab will be of advantage.

You will be based in Durham's top-rated Geography Department and will join the internationally-recognised Quaternary Environmental Change (QEC) research group.

The appointee will be fully involved in the authorship of publications with the Principal and Co-Investigators, as well as participating in a range of dissemination activities such as international conferences.

Job Description PDRA 2 (Ref: 3548)

Duration: 30 month

Salary: £29,704 per annum

Grade: Grade 7

Contract: Fixed-term, Full-time

Hours: Nominally 35 hours per week

Job Summary and Purpose:

We are seeking to appoint a post-doctoral research associate for 30 months (from April 2010) to work on the dynamics and numerical modelling of ice masses and the history of ice sheet change. The successful candidate will have been awarded (or have recently submitted) a PhD on a related research area, and will have proven expertise in numerical modelling in glaciology and/or a related environmental topic. You will be responsible for: 1) the application of an existing ice stream model to simulate the retreat of the three marine palaeo-ice streams; 2) the development of a numerical sediment transport model and implementation into the existing ice stream model, and 3), a rigorous comparison of the model results with observed retreat patterns of these palaeo-ice streams. Experience in programming with Fortran and Matlab and numerical modelling of the cryosphere is desirable. Some basic understanding of ice sheet dynamics and ice streams is of advantage.

You will be based in Durham's top-rated Geography Department and will join the internationally-recognised Quaternary Environmental Change (QEC) research group. The appointee will be fully involved in the authorship of publications with the Principal and Co-Investigators, as well as participating in a range of dissemination activities such as international conferences.

Deadline for applications: 29 Nov 2009

Further information on the jobs and the application process is available from the Durham job website (jobs references 3547(PDRA 1) and 3548 (PDRA2):

<https://jobs.dur.ac.uk/default.asp>

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