Reconstructing Antarctic Ice Sheet dynamics during the Late Quaternary using its marine geological record

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Date & Time:	September 21 – 23, 2016 9 am – 5 pm
Location:	E-4025 and sedimentary laboratory building D
Language:	English
POLMAR credit points:	3
Registration:	info.polmar@awi.de

Course content:

The Antarctic Ice Sheet is a main driver of global sea-level changes. Its dynamical behaviour is held responsible for sea-level high stands in the past and may lead to major sea-level rise at the end of this century. However, important processes driving the behaviour of the ice sheet take place at its bed and are only poorly understood because of the difficulty to study them *in situ*. The Antarctic continental margin provides excellent geomorphological and sedimentological archives of past ice-sheet dynamics as well as processes occurring at the ice-sheet bed. This course will demonstrate how these geological records can be exploited for reconstructing Antarctic Ice Sheet changes throughout the glacial-interglacial cycles of the last 1 million years and investigating glaciological processes.

The course consists of five lectures and one practical module:

Lecture 1 will give a glaciological overview over the present Antarctic Ice Sheet.

Lecture 2 will provide examples of the ice sheet's geomorphological record preserved on the continental shelf.

Lecture 3 will explain how proximal marine sedimentary records recovered from the continental shelf can be used for reconstructing the maximum ice-sheet extent during the last glacial cycle and the timing of its retreat.

Lecture 4 will show how past changes in ice-sheet size can be inferred from sediment cores collected from deep-water settings surrounding Antarctica.

Lecture 5 will outline what we can learn about past ice-sheet behaviour from far-field proxies and numerical models.

The practical module will focus on studying marine sediment cores, distinguishing different sediment types, and assigning these sediment types to particular depositional environments that help to unravel ice-sheet behaviour in the past.

Target group: The course addresses Master students, doctoral candidates and young postdocs from geosciences and associated fields.

Pre-requisites: Interest in geology, geography and/or glaciology; willingness to get ones hands 'muddy'.

More information: hilc@bas.ac.uk

Our courses are generally free of charge for all participants. However, they do have a price and can cost as much as 150 € per day per student. Please take this into account when cancelling your place on the last minute.