

New coccolithophore records from the southern Svalbard margin: Preliminary results on the SVAIS Cruise sediment cores

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SVAIS is a project supported by the Spanish Government within the 2007-2009 IPY activities. Its main goal is to contribute to the understanding of the evolution of glacial continental margins and the relationships with the changes in ice-sheet dynamics induced by climatic changes by: 1) geophysical and stratigraphic high-resolution studies of an ice-stream-dominated marine depositional system of the Arctic margin, and 2) definition of its sedimentary architecture and seafloor morphology, and record of their evolution since the onset of glacial conditions. For those reasons, a glacial depositional system on the Southern Svalbard margin (the Storfjorden margin) was chosen on account of its relatively small size and its location in a highly climatically sensitive area near the gateway to the Arctic Ocean.

The SVAIS cruise took place in August 2007 onboard the *BIO Hesperides*, a Spanish scientific research vessel. Detailed multibeam bathymetric survey, shallow seismics (TOPAS), single-channel seismic reflection, and coring of 6 sediment cores were performed during the cruise. Two of the piston cores (SVAIS01 and 04) were recovered in deep waters in the lower slope, three others (SVAIS02, 03 and 05) were sampled in the upper slope, and the last one (SVAIS06, gravity mode) was recovered in the shelf area.

The micropaleontological studies on the SVAIS materials aim to provide a stratigraphic framework for the evolution of the Storfjorden margin, to obtain a paleoceanographic record that allows the reconstruction of the margin dynamics in relation to the climatic changes at different temporal scales, and to improve the calibration of micropaleontological proxies (nannoflora, foraminifers and diatoms) in the high-latitude sub-arctic region of the Atlantic. The initial micropaleontological analysis indicates that the recovered sediments are of good quality, with absence of major preservation problems. All cores contain material deposited in a time interval that includes the Holocene and presumably the Deglaciation and some parts of the Last Glacial Period; differentiation between these periods is made taking into account criteria such as presence/absence of marker species, taxa abundance, diversity of assemblages, and amount of lithics. Holocene sediments deposited within an oceanographic context similar to the present cover the top centimetres of the study area, while further downcore the sedimentation has occurred most likely in a glacial-like scenario, in which the proximity of ice-sheets and the extension of sea-ice cover played a major

role in the oceanographic conditions and deposition processes, with drastic assemblage changes closely associated with the oscillations in the extent of the nearby sea-ice.