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The Kongsfjorden Channel System offshore NW Spitsbergen, European Arctic: evidence of down-slope processes in a contour-current dominated setting on the continental margin

Matthias Forwick (1), Jan Sverre Laberg (1), H. Christian Hass (2), and Giacomo Osti (3)

(1) University of Tromsø - The Arctic University of Norway, Department of Geology, Tromsø, Norway (Matthias.Forwick@uit.no; Jan.Laberg@uit.no), (2) Alfred Wegener Institute for Polar and Marine Research, Wadden Sea Research Station, List, Germany (Christian.Hass@awi.de), (3) Centre for Arctic Gas Hydrate, Environment and Climate (CAGE), University of Tromsø - The Arctic University of Norway, Department of Geology, Tromsø, Norway (Giacomo.Osti@uit.no)

The Kongsfjorden Channel System (KCS) is located on the continental slope in the eastern Fram Strait, off northwest Spitsbergen. It provides evidence that the influence of down-slope sedimentary processes locally exceeds regional along-slope sedimentation. Compared to other submarine channel systems on and off glaciated continental margins, it is a relatively short system (∼120 km) occurring at a large range of water depths (∼250-4000 m). It originates with multiple gullies on the Kongsfjorden Trough Mouth Fan merging to small channels that further downslope merge to a main channel. The overall location of the channel system is controlled by variations in slope gradients (0-20°) and the ambient regional bathymetry: widest and deepest incisions occur in areas of steepest slope gradients. The KCS has probably been active since ∼1 Ma when glacial activity on Svalbard increased and grounded ice expanded to the shelf break off Kongsfjorden repeatedly. Activity within the system was probably highest during glacials. However, reduced activity presumably took place also during interglacials. The presentation summarizes the work of Forwick et al. (2015).

Reference:
Forwick, M., Laberg, J.S., Hass, H.C. & Osti, C., 2015. The Kongsfjorden Channel System offshore NW Svalbard: downslope sedimentary processes in a contour-current-dominated setting. Arktos 1, DOI: 10.1007/s41063-015-0018-4.