



Dynamics of marine ice streams as inferred from the geomorphology of the Barents Sea continental shelf.

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The importance of ice streams to ice sheet dynamics is well known, as is the need to improve knowledge of their dynamic behaviour. Our understanding of the processes which control their dynamics remains incomplete, but subglacial conditions are considered key. Palaeo-records of rapid ice stream retreat can play an important role in identifying the processes involved and providing a context for interpreting investigations of present-day ice masses. Here we present observations of seafloor bathymetry, 2D and 3D seismic data from the Barents Sea which reveal the geomorphology of former ice stream beds and internal structure of underlying sediments. The identified geomorphic features and landforms tell us about variations in past ice-stream flow and ice-stream dynamics. We see a clear change from cold conditions during maximum glaciation to meltwater dominated conditions during later retreat phases and final ice-stream collapse.