



## **Characterising iceberg scour in diamicton, Scoresby Sund fjord system, East Greenland**

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Icebergs are major components in shaping polar and sub-polar continental margins, fjords and lakes. When the keel of an iceberg exceeds water depth it ploughs through soft sea/lake sediments gouging out kilometre long scours, 100s of metres wide and tens of metres deep. Because the influence of iceberg scours on sediment is a critical factor when offshore structures (e.g. oil/gas pipelines, power cables) are installed, the surface morphology of iceberg scours on sea/lake beds is relatively well-documented. Less however, is known about sub-scour (i.e. below the sea/lake bed surface) deformation, which is critical to inform i) installation of offshore structures where iceberg scour presents a geohazard, and ii) palaeoenvironmental reconstruction e.g. past ice sheet dynamics, glacial margins, climate etc. Despite advances in numerical modelling and physical testing of sub-scour deformation, such methods are largely still in their infancy, and they are rarely validated using direct empirical evidence of sub-scour deformation. The aim of this research therefore is to macroscopically and microscopically (thin sections) identify the style and intensity of deformation by the ploughing action of iceberg keels in diamictic cores collected from sediments in the heavily iceberg scoured Scoresby Sund fjord system, offshore of East Greenland.