

Cosmogenic surface exposure dating with ^{36}Cl on Jan Mayen

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Jan Mayen is the northernmost island on the North Atlantic ridge, situated 550 km north of Iceland. Glacial sediments and landforms are relatively common on the island but so far only the youngest moraine system, corresponding to the little ice age, have been dated.

In this project we use cosmogenic surface exposure dating with ^{36}Cl to extend the glaciation chronology on Jan Mayen. So far 23 samples, sampled from landforms ranging from the fresh little ice age moraines to the older till surfaces on central Jan Mayen, have been analyzed. The samples give mostly reasonable ages that are consistent with the relative ages of the landforms. However, the lack of independent age control and the limited knowledge of the paleoenvironmental history of Jan Mayen means that it is challenging to constrain key variables such as local production rate, isostatic rebound or erosion. Here we discuss the problems and potential for ^{36}Cl dating on Jan Mayen and the implications for the precision of the chronology.