

Masters thesis by Mika Lanzky

Title: Ice core Data from Renland. Investigation of firn cores, main cores and evaluation of isotope-enabled GCMs for Renland.

Abstract: This thesis deals with ice core data from Renland, an island off the East coast of Greenland, in the form of two firn cores and the old and new main core, and evaluates data from two isotope-enabled GCM's, in order to understand the newly drilled core from Renland and the climatic context hereof.

The firn cores was processed and measured for their isotopic composition, a comparison was made to GCM data, and the borehole temperature was modelled for the sites of both the old and new core, using a model with a firn layer and having a density dependency of the thermal parameters.

The firn cores was found to be similar in isotopic value and accumulation, making the old and new main core readily comparable, however, results also suggest that the flow of the two sites are not of the same kind. The GCM data shows good agreement with the measurement data, both in isotopes, precipitation and temperature when viewed separately, while the combination of them still lack improvement.

The agreement of the two sites, the gridded data from a GCM and the temperature modelling run with input from a further away meteorological weather station suggest that the climate experienced at Renland is indicative of a broader, perhaps even regional, signal in the area of Southeastern Greenland.