

Bachelor Thesis

# 3D modelling of folds in the Northeast Greenland Ice Stream area

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## **Abstract**

The North East Greenland Ice Stream (NEGIS) is the largest ice stream in the northern hemisphere and therefore important for global climate and sea level changes. To get a better overview of the northeast of Greenland, a 3D model with the newest radar data from CReSIS (Center of Remote Sensing of Ice Sheets, Kansas University) was created. For that purpose, radar images were imported to MOVE (a software for structural modelling and analysing by Midland Valley) for the northeast of Greenland. Furthermore, digital elevation models (DEMs) of bedrock and ice surface were added, as well as different horizontal images including velocities and strain rates. The model shows large folds adjacent to NEGIS, where flow velocities and strain rates are comparatively low, which is different than it was expected. It is discussed that the former presence of ice streams explains the current position of the folds, what results in the hypothesis of NEGIS being a comparatively young ice stream.