

# **A Statistical Analysis of Paleo-Climatic Data**

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## **POSTER**

The ice core samples from the Green Ice Core Project (GRIP) provide an extensive record of climate for the past 100,000 years. The major aerosol components within the ice were recorded, and the calcium signal from the ice core is used as a climate proxy. The main purpose of the project is to fit a switching state-space model to the  $\log(\text{Calcium})$  signal and use the model for predicting climate shifts between two climatic states: cold glacial periods and warmer interstadial periods. A stochastic version of the Expectation Maximization algorithm is used for parameter estimations. The proposed model was able to predict Pleistocene climate shifts, contributing to understanding climate change.