Current MSc-Project within the Paleoecology section

Simulating future climate change impacts on forests in the Canton of Bern

Future climate change will have a drastic impact on forests, affecting important ecosystem services such as timber production or carbon sequestration. Dynamic vegetation models have been used to make projections about future vegetation changes based on different climate projections for global, continental or local scales. However, policy makers and ecosystem managers need to have information about future changes on the regional scale, e.g. the Canton of Bern. The proposed MSc-project would upscale an existing, local-scale dynamic vegetation model (LandClim) using the high performance computing cluster at the University of Bern (UBELIX) to make detailed predictions about the future forest composition of the Canton of Bern. The MSc-project would be in close collaboration with the Oeschger Centre of Climate Change research at the University of Bern and the forestry department of the Canton of Bern to ensure that the results directly reach the practitioners in the field to mitigate climate change impacts on the forests of Bern.

Methods: dynamic vegetation modelling, numerical techniques, GIS

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Warmer temperatures and drier summers are expected to alter the species composition of forests in the Canton of Bern. Dynamic vegetation models can be used to simulate these changes and provide important information to maintain future ecosystem services.