

Advanced Climate Data Analysis

Prof. Dr. Thomas Mölg

Programmes: MSc Physical Geography (Module MV); MSc Climate & Environmental Sciences (Module Advanced Methods)

ECTS: 5 (2 SWS)

Participants: max. 20

Times & Location: see UNIVIS

Pre-meeting: none

The goal of this course is to improve your treatment of four-dimensional data sets. We will focus on various climatic data: station data; modern reanalysis products; satellite-based data; and climate model output. Simple exercises in the beginning will help remind us of the basic properties of climate data while they are transformed between different spatial and temporal scales. We then proceed to more sophisticated methods, which include the extraction of patterns from 4D data, statistical downscaling, and statistical model building. Application to predicting climate variability or revealing processes will highlight the practical value of these procedures. Even if the focus is on climate data, the underlying principles of the analysis methods can be applied to any large data sets that contain space/time data. For participation in the course, good knowledge of statistics and basic knowledge in programming are a requirement.

