

Projektbeschreibung “Climate and Chemistry”

Technischer Ansprechpartner: Katinka Petersen

The goal of the project is a better understanding of the interactions between climate and atmospheric chemistry. One focus will be on the influence of circulation changes under a changing climate on global distributions of atmospheric trace gases, and the role of stratosphere-troposphere exchange on local budgets of tropospheric trace gases (e.g. ozone).

The NCAR Whole Atmosphere Community Climate Models (WACCM) is used to study the interactions between climate and atmospheric chemistry. This model has a detailed representation of tropospheric and stratospheric chemical and dynamical processes. WACCM is a fully interactive model, where the radiatively active gases affect heating and cooling rates and therefore dynamics. WACCM can also be driven with specified (external) meteorological fields (e.g. meteorological fields from the NASA GMAO data assimilation center). This approach essentially turns the WACCM into a chemical transport model, which is useful for studies that involve synoptic scale comparisons to satellite and aircraft data.