



Influence of ozone chemistry on atmospheric variability in a coupled climate model

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Ozone, especially in the stratosphere, is an important factor impacting on climate dynamics and thus also on atmospheric variability. Aiming to develop a better understanding of chemistry-dynamics-feedbacks, a new coupled AOGCM with simplified stratospheric chemistry was designed at the AWI Research Unit Potsdam in the frame of the PEP (Pole-Equator-Pole) network. This model, ECHO-GiSP, was used to perform two 150-year climate simulations in order to study coupling mechanisms of ozone chemistry and dynamical processes, focussed on decadal scales. One of the runs was only considering atmospheric chemistry “offline”, driven by the simulated dynamics, the other, “online”, run additionally allowed for the opposite dependency via radiation processes. Here we present results from this simulations, which indicate changes in the general circulation in tropo- and stratosphere, and discuss their differences in terms of decadal variability, e.g. analysing arctic oscillation modes.