

### **Impact of sea ice loss in polar regions on stratospheric dynamics**

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This study investigates how sea ice loss in the Arctic and Antarctic regions affects the dynamics of the stratosphere. Analyses have been performed on the basis of multi-year time-slice experiments with the chemistry-climate model E39CA. Although the effects found in the stratosphere are relatively small, i.e. the statistical significance is low, some interesting results are identified. Due to the used boundary conditions changing the polar sea-ice content in both hemispheres, analogies in the Northern and Southern polar stratosphere are identified. The strongest stratospheric response is found in times of enhance planetary wave activity. It is shown that stratospheric changes can be mostly reduced to dynamical processes.