



The solar influence on the troposphere: The circulation response in GLIMPSE data

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Statistical analysis has earlier shown significant solar influences on the tropospheric circulation in reanalysis data. Here, a comparative analysis is presented between a model experiment forced by solar irradiance fluctuations, and the NCEP/NCAR reanalysis data.

We use up to 500 years of monthly data from the GLIMPSE experiment, which used the coupled model ECHAM4-OPYC3 driven with relevant natural and anthropogenic forcings. The influence from solar irradiance fluctuations on the large scale atmospheric circulation in the model data are compared to that of the reanalysis data, where modulations of the Hadley, Ferrell and Walker circulation cells have been detected.