



## **21st century Climate Change Simulations including solar scenarios performed with ECHO-G**

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Besides the standard IPCC control or climate change runs we performed several climate change simulations in ensemble mode using the ECHO-G model which addresses sensitivity questions outside the IPCC mainstream. We conducted simulations of the 21st century with three realisations, each forced by the SRES A1B greenhouse gas and aerosol forcing and two hypothetical solar scenarios. These have been defined by the anomalies of the 20th century solar variability around the mean solar constant mirrored at the year 2000 and multiplied in scenario "up" by a factor of +1 and scenario "down" by a factor of -1.

This approach adds typical observed solar variability in amplitude and time scale to the anthropogenic A1B forcing. Together with the available "full forcing" 20th century ECHO-G ensemble with 5 realisations we evaluate the transient climate sensitivity of the 2m-temperature variability with respect to both forcings and compare the results of the 20th vs. the 21st century simulations.