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Supplement of

Climatic impacts of stratospheric geoengineering with sulfate, black carbon and titania injection

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**Fig. S1** (left) Gravitational sedimentation rates for sulfate, titania and black carbon, calculated using densities of 1769, 4230 and 1000 kg/m$^3$ respectively, the mass-weighted radii of the specified log-normal distributions and the method of Pruppacher & Klett (1979) (right) We use the International Standard Atmosphere (ICAO, 1993) for temperature and pressure as a function of altitude.
Fig. S2 Annual-mean 550nm optical depth anomaly for sulfate (G3S), titania (G3TiO₂) and black carbon (G3BC)
Fig. S3 Seasonal cycle of global/monthly-total aerosol deposition anomaly
Fig. S4 Annual/zonal-mean energy flux anomaly at the surface (W/m²)
Fig. S5 DJF southern-hemisphere sea-ice edge plotted with the HIST extent
**Fig. S6** JJA (top) and DJF (bottom) zonal-mean temperature anomaly with altitude, with respect to the HIST temperature profile for RCP8.5 (a,e), and with respect to RCP8.5 for G3S, G3BC and G3TiO$_2$.
Fig. S7 DJF zonal-mean zonal wind anomaly with respect to HIST
Fig. S8 Timeseries of equatorial ($5^\circ$S-$5^\circ$N) zonal-mean zonal wind profile (HIST - 3 ensemble members)
Fig. S9a Timeseries of equatorial (5°S-5°N) zonal-mean zonal wind profile (2nd ensemble member)
Fig. S9b Timeseries of equatorial (5°S-5°N) zonal-mean zonal wind profile (3rd ensemble member)
Fig. S10 Timeseries of global thermosteric sea-level rise, calculated using changes in oceanic temperature and salinity. (Top) Global mean thermosteric sea-level rise (bottom) Global mean oceanic density anomaly