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Impact of geoengineering on global climate - First GeoMIP simulationswith ECHAM6/MPIOM

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In recent years, several methods have been suggested for "geoengineering" the climate to limit global temperature increase. One of these assumed geoengineering techniques tries to reduce the incoming solar radiation through space-born reflectors at the Lagrangian point.

With the MPI-ESM, including the GCM ECHAM6 and the ocean model MPIOM, simulations have been performed to balance an CO2 increase by reducing the incoming solar radiation. The simulations were preformed within the EU project IMPLICC and follow the suggestions of the GeoMIP initiative. We are going to present results balancing a 4x CO_2 increase as well as an increase of 1% CO_2 per year. First results show a global decrease of precipitation of roughly 4%, with locally stronger impacts e.g. over Eurasia and North America as well as an impact on the surface pressure causing implications on regional weather regimes.