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Atmospheric circulation changes due to delayed stratospheric aerosol injection in high-res CESM

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A proposed method to aid in mitigating global climate change is stratospheric aerosol injection (SAI). Recent work on SAI has shown its ability to reverse some of the changes induced by global warming, if employed properly. Still, many uncertainties on the effects of SAI exist. It is unclear if we can reverse the same amount of change with delayed SAI at high resolution, to be defined as 0.25 degree atmosphere or finer. A method is introduced that produces the needed atmospheric forcing for the atmospheric model component, which has a lower model top than more generally used in SAI studies. This method is based on existing data from the Geoengineering Large Ensemble Project (GLENS), and allows us to run high-resolution experiments. In this study, we further investigate atmospheric circulation changes using the Community Earth System Model (CESM), with a focus on Antarctica.