

AOGS 23rd Annual Meeting

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AS07 - Climate Intervention: Understanding its Physical Mechanisms and Impacts

Conveners:

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Session description:

Numerous innovative climate intervention concepts, collectively known as solar geoengineering or Solar Radiation Modification (SRM), are emerging as potential vital strategies in the fight against climate change, with the aim of partially affecting the Earth's energy balance in order to reduce global warming, either locally or globally. Among these, the hypothetical stratospheric aerosol injection (SAI) technique is noted as a possible solar geoengineering approach due to its potential feasibility. Research on other methods, such as marine cloud brightening and cirrus cloud thinning, is being explored in parallel with research into various carbon dioxide removal approaches.

However, it is essential to acknowledge that while geoengineering presents the potential to be part of a broader set of solutions, it also entails considerable risks and ethical dilemmas that require thorough examination. For instance, how long would geoengineering need to be applied for, and how will the Earth respond to these climate intervention strategies? Additionally, how will different climatic variables, including their vertical and horizontal structures, respond to them? Amongst others, impacts on agriculture, ecosystems, public health, and other areas require further investigation.

This session aims to raise the profile of climate intervention and geoengineering at the AOGS. By bringing together presentations that were previously scattered across various sessions in earlier AOGS meetings, we aim to establish a cohesive platform for critical discussion and debate. The focus will be on evaluating the current status of climate intervention research, identifying key knowledge gaps, and mapping a path toward groundbreaking advancements in this essential field.