

Adventures in Solar Radiation Modification with the UKESM1 climate model

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Aerosols are well known to cool climate. The most prominent proposals for include: i) stratospheric aerosol intervention (SAI) which aims to mimic the cooling observed after explosive volcanic eruptions; ii) marine cloud brightening (MCB) which aims to mimic the observed brightening of clouds caused by ship exhausts and degassing volcanoes. In this talk, I will present a summary of SAI and MCB work performed using the UKESM1 climate model; work that is informed by natural analogues in the form of explosive and effusive volcanic eruptions and intense wildfires. The results indicate that there are many perils and pitfalls that need to be carefully assessed and negotiated before any practical deployment scheme could be contemplated.