

Interactive comment on “Sulfate Geoengineering Impact on Methane Transport and Lifetime: Results from the Geoengineering Model Intercomparison Project (GeoMIP)” by Daniele Visioni et al.

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Thank you for your comment. We think that adding some discussion on air pollution could greatly benefit our conclusions. The first paper you mentioned is already cited in regards to ozone depletion (page 22, line 9 in the discussion paper), but will also be included in the conclusions.

We have added a paragraph in the revised manuscript at the end of page 25 (of the revised manuscript). It states: “In addition, gas species concentration changes (espe-

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cially ozone) would also affect air quality and surface UV concentrations, which might have implications on human health, as already noted in Xia et al. (2017) and Nowack et al. (2016). As discussed in the present study, as well as in Nowack et al. (2016), Tilmes et al. (2012) and Pitari et al. (2014), the stratospheric ozone depletion induced by geoengineering solar radiation management techniques directly impact the tropospheric UV budget. The health impact of surface UV increases (located only at mid-high latitudes in the case of sulfate geoengineering) may be partly counterbalanced by the decreased tropospheric OH concentration and O₃ production.”

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