

Interactive comment on “

Potential impact of iodinated replacement compounds CF_3I and CH_3I on atmospheric ozone: a three-dimensional modeling study” by Daeok Youn et al.

Anonymous Referee #2

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This paper discusses the possibly role of short lived iodine compounds for stratospheric ozone depletion. As there are more surface emissions that previously thought - e.g. from seaweed. There is a chance that tropical emissions sources could reach the stratosphere. This paper quantifies their ODPs using both a 3D and 2D model and finds them to be very small. This result is of significant interest to the science community.

The paper is well written and the research looks sound. My only real suggestion is to

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expand the discussion and context which I think would make the paper more interesting. Suggestions below

1. Convective fluxes and how high they go seem crucial to your findings. I find it hard to tell how you find the chemistry of the model to be ok? with two largely unconstrained unknowns - convective mass fluxes and chemistry - how do you really test your model to see what is right/wrong. I think models often do not get any convective overshooting. I know they all have big problems getting strong enough convection and its diurnal cycle over the maritime continent (e.g.) Adding discussion of these points would really help. What would be the consequences if you had the mass flux wrong?
2. Why are 3d and 2D results similar - is the 2d just parameterised from the 3d mass flux or is something else going on?
3. What can your results say about the role of vls in tropical stratospheric ozone trends, e.g. is the speculation as to the cause of trends in Forster et al, 2007 wrong -
4. It is worth discussing their role in SOA - however briefly for context?

Forster, PM; Bodeker, G; Schofield, R; Solomon, S; Thompson, D (2007) Effects of ozone cooling in the tropical lower stratosphere and upper troposphere, GEOPHYS RES LETT, 34, . doi:10.1029/2007GL031994

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