

Interactive comment on “Sensitivity to grid resolution in the ability of a chemical transport model to simulate observed oxidant chemistry under high-isoprene conditions” by Karen Yu et al.

Anonymous Referee #2

Received and published: 14 March 2016

The authors explain and show concisely the main thesis of the manuscript which falls within the scope of the journal. References and discussion of previous work is sufficient. I recommend publication with minor revisions.

Main comments

Many aspects (mostly chemical) are left to other papers which are not all available in ACPD yet (e.g. Travis et al.). Therefore, I would like to see in the manuscript the relative differences for the simulated daytime ozone levels going from $2^\circ \times 2.5^\circ$ to $0.25^\circ \times 0.3125^\circ$ resolution. Such a figure for August at the surface and at 4 km would be sufficient and help make the point of the authors clearer.

C1

The authors discuss the segregation of isoprene and NO_x emissions and of isoprene oxidation pathways. These statements need some abstraction by the reader and are obvious. They should be substantiated by calculations. The literature I am aware of discusses the intensity of chemical segregation between two species like isoprene and OH and not between two pathways or emissions. Please add mathematical definitions, calculations and a figure for different model resolutions.

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2015-980, 2016.

C2