

Interactive comment on “North American isoprene influence on intercontinental ozone pollution” by A. M. Fiore et al.

Anonymous Referee #2

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The manuscript makes use of the model data in the HTAP database. This dataset is supplemented by additional model calculations investigating the effects of biogenic isoprene emissions.

The paper is well written and scientifically sound. Parts of the manuscript can be hard to follow. A further split into subsection could possibly make the arguments easier to follow.

Figures are rather small. Could the size be increased so that they at least fit the page-width? The colour scales, in particular in Fig. 2, are hard to interpret as the colour blue appears both on the negative and positive end of the scale. The title of the paper does not reflect that the paper also deals with the influence on domestic ozone pollution.

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Section 3, _____ page 24830, top. I guess the NOx and isoprene emissions are co-located on the 1.9 x 1.9 degree grid, but possible not on a finer grid. How might the calculated effects of isoprene emissions be affected by model resolution?

page 24830, lines 21 - 22 But the main reason must be that PAN formation "steals" NO₂, and makes less NO₂ available for HNO₃ formation?

Section 4 _____ In this section you discuss regional vs intercontinental, and separate effects on ozone and PAN. It would be easier for the reader if you could make the distinction between these clearer in the text. The potential for PAN as an indicator for ozone precursor emissions could be a subsection.

Page 24831, line 20 Should it be Fig. 3?

Section 5 _____

Page 24834, lines 1 - 10 It could be stated even clearer that the modulation refers to the response to NA anthropogenic emissions and not the actual concentrations.

Page 24834, Line 16 Should it be 40 - 100% ?

Last part of section 5, from Page 24834, line 23 Am I right to say that this point must be partially illustrated also by the difference in dotted and dash dot lines in figure 3?

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 24821, 2010.