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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Impact of climate change on photochemical air pollution in southern California" *by* D. E. Millstein and R. A. Harley

Anonymous Referee #4

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General comments: This paper adds a valuable perspective on the possible impacts of climate change on air quality in southern California, where air quality is among the worst in the country. The paper considers some very important drivers such as expected changes in temperature, biogenic VOC, humidity, future emissions, and boundary inflow. While it would be unreasonable for one paper to address all possible drivers, it would be informative to have a broader discussion of other how other potential climate drivers, such as stagnation or storm track/frequency/etc., might impact air quality in Southern California. Lastly, the paper uses the metric of 1-h ozone. Since most adverse health impacts are expected to occur at durations longer than this, and the Federal health standard is based on an 8-h standard, it would be more useful to evaluate ozone increases based on an 8-h timeframe.

Specific comments: Page 1566, lines 7-16: This paper includes not only isoprene, but also methyl-butenol and terpenes for biogenic emissions. Most papers consider only isoprene so this is an important strength of this work.

Page 1568, lines 23-25: Humidity often has the effect of decreasing peak ozone. Additional discussion of why the response of peak ozone to increased humidity is mostly positive would be valuable.

Table 2. -Why does the Inflow BC change at the various sites? It is not clear from the methods section how the Inflow BC is being modeled. -It would be interesting to know why the combined effects do not equal the sum of the individual effects.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 1561, 2009.

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Interactive Comment