

***Interactive comment on “Modeling natural emissions in the Community Multiscale Air Quality (CMAQ) model – Part 2: Modifications for simulating natural emissions” by S. F. Mueller et al.***

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(1) Regarding more sub-regional analysis & spatial plots – The reviewer wants to see more spatial plots of model results. I agree that spatial plots are very useful for visualizing model output. The only reason we did not include more spatial plots is due to the already large size of the paper (now including 11 figures). This is the reason I mention in this paper that a third paper is forthcoming (under review, Environmental Science & Technology) that includes more information on spatial model results and discusses the regulatory implications of our natural emissions modeling. Also, the new Figure 11 I am

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adding (see response to other referee) includes spatial plots of total simulated ozone, PM<sub>2.5</sub>, and the ratio of anthropogenic to natural ozone and PM<sub>2.5</sub> for July. These plots provide some insight into sub-regional model behavior. We can provide more spatial plots as “Supplementary Material” if the editor decides it is necessary but, given the next paper already in review, it seems better to defer to it. The intent of this paper is to highlight the model changes and some of the results of those changes. The follow-up paper describes in greater detail results of the model applied to the entire year using multiple emission data sets.

(2) Higher springtime ozone – I address this comment under the same comment made by Reviewer 1. See previous reply.

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