

Interactive comment on “Sensitivity of stomatal conductance to soil moisture: implications for tropospheric ozone” by Alessandro Anav et al.

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We thank Dr. D. Simpson for the time taken to read this manuscript and provide useful clarifications. Please find below our responses to the above comments. We are well aware of the difference between EMEP MSC-W and DO3SE model. Indeed, we would clarify that we never mention the EMEP MSC-W model in the whole paper, and we only refer to EMEP inventory as anthropogenic emissions used to drive our model. However, we agree that the reference Simpson et al (2012) at L104 could be misleading; for this reason we will remove this reference in the revised version of this manuscript. We also would highlight that our estimate of SMD is from Tuovinen et al (2004); it is based

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on the Noah model which, being based on a solution of Richards' equation, estimates SWC from diffusivity, physically related to SWP, and offers the parameters needed to convert SWC into SMD. Also, Noah parameterization is much more complex than used in Tuovinen et al. (2004). These factors will much reduce the uncertainties outlined in Tuovinen et al (2009). The approximation of the SWC/SWP curve to a linear function is dictated by the Noah model itself and we hold it, within the interval (FC>SWC>WP) relevant to our study, and within the aims of our study, acceptable. We also think that, presently, Noah is the best-approximating model that can be used at continental scale. Finally, Allen et al. (1998) and Martinez-Fernández et al. (2015), both cited and discussed in the text, outlined that a linear relation between stomatal aperture and SWP is unlikely. Regarding the worst-case risk assessment, we fully agree with the above comments; in fact this part was already well discussed in the text (see L74-L78). Finally we acknowledge Dr. D Simpson for recognizing the importance of this work in assessing the role of soil moisture in atmospheric chemistry models and consequently in policy-relevant assessments.

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