Atmos. Chem. Phys. Discuss.,
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "A model-based analysis of foliar NO_x deposition" *by* Erin R. Delaria and Ronald C. Cohen

Anonymous Referee #2

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This manuscript considers the importance of properly representing stomatal control in models of NOx deposition. The model framework is kept fairly simple as needed for anything that would be useful to larger-scale regional to global models. Two sites representing a dry montane pine forest and a mesic deciduous forest are considered. The model demonstrates reasonable skill at representing stomatal conductance and the resulting fluxes and concentrations of NO and NO2. Because stomatal conductance is so important, NOx deposition is shown to have diel and seasonal patterns influenced by moisture availability, which is not typically accounted for in standard resistance models. Overall, this paper presents a path forward for reconciling the literature on NOx canopy uptake factors using a more mechanistic approach. The paper is well written and provides a good description of the model and listing of the parameterizations used and

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Discussion paper

their sources. My only minor concern is that the figure captions and legends tend to be very terse and readers have to work to hard to figure out what the different symbols and lines mean. It would help to use few more words in the caption so it is clear what the lines and symbols in each panel are. When the same scheme in several panels is the same, just say so.

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