

***Interactive comment on “Development of a
Reduced Complexity Plant Canopy Physics
Surrogate Model for use in Chemical Transport
Models: A Case Study with GEOS-Chem v12.3.0”
by Sam J. Silva et al.***

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Received and published: 28 February 2020

In your Introduction and Section 4.2 on dry deposition, you may want to discuss the recent work of Lin et al. (GBC, 2019), who showed that missing variability in ozone dry deposition velocities (V_d) from the Wesely scheme in GEOS-CHEM is due to the lack of stomatal deposition sensitivity to soil moisture deficits. Using observations at a suite of sites during wet and dry conditions, Lin et al. evaluated ozone V_d from GEOS-Chem and a new photosynthesis-based dry deposition scheme implemented in GFDL's dynamic vegetation model.

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References:

Lin, Meiyun, Sergey Malyshev, Elena Shevliakova, Fabien Paulot, Larry W Horowitz S Fares, T N Mikkelsen, and L Zhang, October 2019: Sensitivity of ozone dry deposition to ecosystem-atmosphere interactions: A critical appraisal of observations and simulations. *Global Biogeochemical Cycles*, 33(10), DOI:10.1029/2018GB006157

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2018GB006157>

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2019-334>, 2020.