

Minor corrections for

egusphere-2023-1311:

S. Das et al: Improved Simulations of Biomass Burning Aerosol Optical Properties and Lifetimes in the NASA GEOS Model during the ORACLES-1 Campaign

17 Feb 2024

The following refer to lines in the Author's tracked changes document:

201: "wind-blown source function" – this is not clear and has connotations of sea-salt aerosol generation by wind-blown whitecaps leading to increased AOD (cf. e.g. Smirnov et al 2012 <https://doi.org/10.5194/amt-5-377-2012>), or bubble bursting (cf. e.g. Prather et al 2013 <https://doi.org/10.1073/pnas.1300262110>). DMS is not generated by the action of the wind. Lana et al 2011 refer to the rate of transfer of DMS dissolved in seawater to the atmosphere being proportional to wind-speed. Is this what is implemented in the model?

274: "possible cloud pixels in the satellite" : "cloudy"

305: "spatially overlapped geographically" : "spatially" & "geographically" mean basically the same thing.

345: "... similar profile shape...."

375: "strongly but negatively correlated": e.g. "show a strong negative correlation"

519: "Figure 13a showed..." – rather stick to the present tense.

575: "have a systematic low bias compared to the AERONET observed AOD" – suggest: "systematic low AOD bias compared to AERONET observations"

575: "but nonetheless can capture its daily variability" – this suggests intra-day variability. Perhaps "day-to-day" is better.

578: "...case here corrected for the excessive absorption..." it's not clear what is meant. Is the AERONET data corrected by the authors, or did the "OA-loss+updated optics" treatment correct the bias that is observed relative to AERONET?