

Scientific:

Lines 198-208, calculation of OH reactivity, is somewhat confusing. One suggestion is to be consistent with language and use “reaction rate constant” throughout. Line 202...does this mean that reaction rate constants were calculated for all compounds with hourly resolution using measured temperature? Please just reread for clarity.

Lines 280-282: There are counter-examples of measured terpenes being highest at night, with clear daytime peaks. Bouvier-Brown et al., 2009; Pfannerstill et al., 2024

Line 302: Do you mean that benzene can initiate new particle formation or just contribute to SOA formation? I am unfamiliar with the former (contribution of benzene to NPF).

Lines 350-354: Note that toluene also has a biogenic source, and appears as an emission in biogenic emissions models (e.g., MEGAN). This does not mean your conclusion is wrong, but you may want to rethink given that toluene can be biogenic.

Editorial:

It is suggested to remove all exaggerated/non-quantitative/qualitative language. Some examples include: “grave implications” (line 49), “imminent implications” (line 359), remove “clearly” in Fig 1 caption.

Line 66: suggestion to change “..ozone enhancement will lead to...” to “ozone enhancement may lead to...”

Line 88: “several VOCs” should be changed to “hundreds of VOCs”

Line 156: needs revision

Line 166: cabin or shed? (not clear what a cabin shed is)

Line 167: “can be” missing “found”

Line 371-378: This section describes “sporadic...emission and transport” and “infrequent emissions”. During a fire, emissions and transport will be ongoing (and not sporadic or infrequent). It is more than the variability in emissions and transport lead to infrequent interception of the smoke at any given location. Suggestion to reword to make that clearer.

Line 439: “accounted for” should be changed to “attributed to”

Lines 549-554: This paragraph is talking about biomass burning/wildfire emissions, but concludes with talking about “such AVOCs”. BB/wildfire emissions are not considered AVOCs. The specific compound, benzene, that you are describing has both pyrogenic and anthropogenic sources. Last sentence should be revised to make that clearer.