

Biogeosciences Discuss., referee comment RC2  
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## Comment on bg-2022-15

Anonymous Referee #2

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Referee comment on "Reviews and syntheses: VOC emissions from soil cover in boreal and temperate natural ecosystems of the Northern Hemisphere" by Valery A. Isidorov and Andrej A. Zaitsev, Biogeosciences Discuss., <https://doi.org/10.5194/bg-2022-15-RC2>, 2022

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Isidorov and Zaitsev review VOC emissions from leaf litter. The topic is timely and the review is comprehensive. Perhaps too comprehensive; the manuscript would benefit from more efficient text in places and removing unnecessary sections, but I admit that I like the more conversational tone. I recommend it be accepted with minor revisions noted below.

96: is this annual production?

115: can it be said with certainty what is and is not common in this case?

121 and elsewhere: the dot to signify multiplication is not needed in my opinion.

159: tropical forests should be mentioned as well, if not only for completeness e.g. <https://www.nature.com/articles/s41467-018-04658-y>

167: this paragraph is unnecessary. There's enough justification of litter mass and perhaps these points can be integrated elsewhere.

205: is Zimmer et al. the relevant reference here?

211: Trowbridge et al. covered this topic for the case of soil fungi:

<https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019JG005479>

239: does photodegradation result in VOC flux from litter? The photodegradation section was a bit long and speculative and distracted from the main theme. It would be better shortened.

for section II, subsections IIa and IIb for abiotic then biotic controls could help the reader navigate all of this material.

445 and a number of paragraphs afterward focus mostly on decomposition over time, which is interesting of course but it is unclear how this entire section contributes to a review of VOC emissions which remain largely uninvestigated as noted on line 485. Shortening this section to focus briefly on microbial changes during the decomposition process would help focus on the topic of the review.

Section V is great and makes key points about global representativeness.