Biogeosciences Discussions

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Comment on bg-2022-16

Anonymous Referee #2

Referee comment on "Accounting for non-rainfall moisture and temperature improves litter decay model performance in a fog-dominated dryland system" by J. Robert Logan et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2022-16-RC2, 2022

This manuscript describes a study that quantified the effects of non-rainfall moisture on litter decomposition across a fog gradient in the Namib desert. Non-rainfall moisture (relative humidity and dew) is thought to be important source of moisture in very dry ecosystems, yet few studies have quantified the effects on litter decomposition. The manuscript describes the results of a multi-year litter mass loss study and tests different temperature and moisture relationships in a simple decay model. They show that including non-rainfall moisture improves the decay model performance.

I enjoyed reading this manuscript. It is very well written and I really appreciate the author's efforts to submit a polished document. I did not see any grammatical or technical mistakes. The study is interesting and provides a novel model that could be tested in other ecosystems. The methods use were appropriate and sound to my knowledge.

I do wonder how applicable is this model/study to other ecosystems? The Namib desert is extreme, would this non-rainfall moisture effect be as prominent in a less extreme but still foggy ecosystem? Is this effect big enough to detect in ecosystems with more decomposition?