

Earth Syst. Sci. Data Discuss., referee comment RC1
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Comment on **essd-2022-54**

Anonymous Referee #1

Referee comment on "*Aridec*: an open database of litter mass loss from aridlands worldwide with recommendations on suitable model applications" by Agustín Sarquis et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-54-RC1>, 2022

This manuscript presented a comprehensive open database containing litter mass loss data from aridlands across the world and provided the methodology to test the appropriateness of model fitting for litter decomposition in order to guide the choice of the best appropriate model in each specific case. They also gave recommendations for future decomposition studies to be added. This work established a platform for a more comprehensive understanding of decomposition in aridlands, which is a contribution to future studies in the area of aridland biogeochemistry, although the data set has low representativity in cold arid regions, hyper-arid and dry sub-humid regions. A few minor revisions are list below.

Specific comments:

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There are some differences in the entries between the database and the original articles, which need a double check :

- In the entry of Almagro et al., 2017, "organic matter remaining%" is shown in the database, but it's "Ash-free dry mass remaining%" in the article;
- In the entry of Tian et al., 2007, "organic matter remaining%" is shown in the

database, but it's "mass remaining" in the article;

- In the entry of DiedhiouSall et al., 2013, the litter initial C/N ratio value seems to be in conformity with the article;
- In the entry of Levi et al., 2020, "starting month" is January in the database, but it's July in the article;

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- Figure 2, it will be better to show the distinction of sites by ecosystem type;
- Line 319, "According to the GAI()...", delete the " ()".
- Figure 4.(a)(b), the ordinate axis title "number of publication", should be " number of publication " .
- Figure 7, there are 8 data points in (c), but 7 data points in (a) and (b). For a representation of the same data set for comparison, please check the raw data.
- In discussion section 4.2, it would be useful to summarize the results of model fitting/model selection for different ecosystem types or GAI classification groups.