



EGUsphere, community comment CC1  
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## Comment on egusphere-2022-963

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Community comment on "Quantification of the effects of long-term straw return on soil organic matter spatiotemporal variation: a case study in a typical black soil region" by Yang Yan et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-963-CC1>, 2022

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### GENERAL COMMENTS

Within a backdrop of prolonged and in places severe soil degradation in the black soil region, the article presents the SOM temporal variations from 2006 to 2018 using an optimized RF model and further explored the effects of straw returning on temporal variations under diverse soil properties and land-use change by creatively considering the spatial distribution of straw returning amount as a variable. The topic is well-focused and will be interesting to the readers of this journal. The datasets used in this work are comprehensive, the models are functional, and the comparisons between different soil types and land use types are valuable. Overall, the manuscript is well-written and presented interesting results. Therefore, I recommend acceptance of the manuscript for its scientific value and importance.

There are a number of minor issues that the authors should clarify to strengthen their manuscript. For example, the introduction can and should be expanded by some discussion on the mechanism of the influence of straw return on soil organic matter, it is necessary to include more references. Also, there are more than 6 soil types in the study area. but this paper only compared SOM results in 6 soil types in the section "Results and discussion".

Specific comments:

- Line 47-48, references should be added
- Line 53, remove "of three folds" and change to "3-fold"
- Line 54, add the full name of "RF"
- Line 90, land-use types. This item needs more description.
- Line 145, needs an explanation of "RF-XY"
- Figure 2: Missing text of X-axis
- In Figure 6,7,8,9,10, please explained "\*\*\*\*"
- Table 1 If the year is not marked, are the variables used in two years?
- A little more discussion n section 3.3 could also help readers.
- Unified "straw return" or "straw returning"