Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2018-303-AC3, 2018

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "An attempt to monitor seasonal dynamics of soil salinization in the Yellow River Delta region of China using Landsat data" *by* Hongyan Chen et al.

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Received and published: 16 December 2018

Thank you for your comments concerning our manuscript which were posted on the NHESS Discussion page on October 31, 2018. Those comments are helpful and constructive for improving our manuscript and future research. The comments and our responses are presented below.

1. This study compared the field survey and remote sensing image for revealing the distributions of saline soil in Yellow River Delta. The study in this area is very important for crop growth and ecological restoration. As a whole, this article was well-written and organized. The results were sound and interesting. I think it could be accepted after

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Discussion paper

minor revision.

Response: We appreciate the encouraging comments on this study, and we will revise the article carefully.

2. TitleïijŽ delete "region".

Response: We agree with the comment and the word "region" in the title will be deleted in the revised manuscript.

3. Abstract: Why is necessary with distinct seasonal climates? I think some field results could be showed in the abstract.

Response: In regions with distinct seasons, the difference of rainfall or evaporation is great in different season, the change of soil moisture is obvious, and soil salinity has close relation to the soil moisture, then soil salinity between seasons varies usually greatly. Therefore it is very necessary to monitor seasonal dynamics of soil salinization with distinct seasonal climates. In order to show the variation of soil salt in four seasons, we agree with the comment and will add some field results to the abstract in the revised manuscript.

4. This sentence "the SSC optimal model in each season was extracted, then, the spatial distributions and seasonal dynamics of SSC in four seasons were analysed." was repeated with the second sentence.

Response: We agree with the comment and will delete some repeated information in the revised manuscript.

5. In the introduction, what is the damage of saline soils in Yellow River Delta?

Response: In Yellow River Delta, soil salinization can result in large reduction of agricultural production and fragile ecological environment. We will add some descriptions to the introduction in the revised manuscript about the damage of saline soils in Yellow River Delta.

6. Figure 1, some labels are not clear. Figure 3, the red underline should be deleted.

Response: We agree with the comment, the labels in Figure1will be clear and the red underline in Figure 3 will be deleted in the revised manuscript before resubmission.

7. This distribution pattern is consistent with the results of other studies (Weng et al. 2010; Yang et al. 2015) should be moved to the discussion part.

Response: We agree with the comment, the above-mentioned sentence will be deleted in results and relative discussion will be added to the revised manuscript before resubmission.

8. In figure 5, it seems that the autumn is the most affected saline soil. I think some field results could also be indicated in the conclusion.

Response: From Figure 5 and Table 7, the SSC in autumn was largely dominated by severely saline soil and solonchak (combined proportion of 77.75%); in winter, the SSC was principally severely saline and solonchak, with the combined proportion of 99.19%, of which the severe saline soil contributed 80.71%. Therefore the winter is the most affected saline soil. In order to provide more clarity we agree with the comment and will add some field results to the conclusion in the revised manuscript.

9. Most of the last paragraph in discussion is not really discussion.

Response: The last paragraph of discussion provides the probable reason of the model selection results and the shortage based on data of the time point, some descriptions maybe are too redundant, we agree with the comment and will delete some descriptions of the last discussion paragraph in the revised manuscript.

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