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Hydrology and Earth System Sciences Discussions

Interactive comment on "A comparison of the soil loss evaluation index and the RUSLE Model: a case study in the Loess Plateau of China" *by* W. W. Zhao et al.

Anonymous Referee #2

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Below are the second-round review comments, including:

General comments

1) Based on page 2423, lines 19 to 23, the spatial land use factor was considered as part of soil index model. However, land use wasn't considered due to lack of data. This most important factors in the model was missing, how come authors were still able to conclude what areas in the watershed need to be optimized are the cause of improper land use? Without the land use data factored in the model, the simulated results are pretty much decided by other factors. Any explanations?

2) The two models came up with different significant soil loss areas. Authors concluded

the significant soil losses occur in the middle and southeastern parts of the watershed (page 2425, lines 14 to 15). Somehow, authors just decided the middle area is the sensitive area (see page 2411, line10 and 11) and did not address why the southeastern part is not.

3) Authors seem mention several times that the RUSLE model predicting the annual soil loss rate and does not identify the locations/ area. If an area had a high soil lose rate, shouldn't it be considered as a problem area?

4) Authors provide quite some discussions (see introduction section) on the multiple scale index and ended up using the sub watershed scale index because it was a comprise between slope and watershed scales. This choice does not appear to be scientifically based. A 7,725-km2 Yanhe watershed sounds more like a regional watershed. Authors may consider better reasons to justify such a choice.

5) It is review's suggestion that, considering the lacks of land use information and model verification, the paper probably should focus on the methodology and comparisons with RUSLE, instead of trying to make some conclusions on which areas are sensitive. Identifying such areas could be an effort towards future studies.

More detailed comments

See the attached PDF document.

Please also note the supplement to this comment:
http://www.hydrol-earth-syst-sci-discuss.net/9/C613/2012/hessd-9-C613-2012-supplement.pdf

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 2409, 2012.