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Hydrology and Earth System Sciences Discussions

Interactive comment on "Spatio-temporal variations in soil hydrology of a typical semiarid sand-meadow-desert landscape" *by* L. Duan et al.

L. Duan et al.

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General Comments: The paper focuses on examining the influence of land use/land cover changes on the spatio-temporal variations in soil moisture. The authors present an interesting case study in the semiarid Horqin Sandy Land in China. Extensive field work was conducted and a huge amount of field data was collected. Statistical analysis was performed to quantitatively evaluate the variations in soil physicochemical properties. In particular, the authors looked into a number of factors, including surface topography, soil texture, vegetation, and human activities. Overall, the paper is well written and all materials are well organized. The data presented in the paper are valuable. The findings from the study can be useful for soil water management, land use planning and management, and environmental assessment (e.g., desertification)

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Interactive Discussion

Discussion Paper

in semiarid regions. I hence recommend that the paper be accepted for publication in HESS.

Thanks!

Specific Comments (Minor Changes): The authors may consider the following minor changes in their final version:

1. Line 4 on page 1896: replace “fine particles” with “fine soil particles”

Yes, we agree.

2. Title of Table 1 on page 1916: “manually” can be confusing.

The caption will be changed as "Table 1. The manually (i.e., nonautomatically) measured parameters.1"

3. Table 1 on page 1916: the authors may use “Ground Water Level” for GWL

Yes, we agree.

4. Table 1 on page 1916: the authors may use “Soil moisture content” for SMC

Yes, we agree.

5. Title of Table 2 on page 1917: suggest to remove “manual”

Yes, we agree.

6. Caption of Fig. 1 on page 1920: the authors may remove “Map showing”

Yes, we agree.

7. Caption of Fig. 2 on page 1921: (1) replace “soil moisture (SMC)” with “soil moisture content (SMC)” and (2) replace “a topography, of the study area” with “topography of the study area”

Yes, we agree.

HESSD

8, C668–C670, 2011

8. The authors may need to indicate that the numbers in Fig. 2b on page 1921 represent elevations. What do the yellow dashed lines represent?

Good points! The revised cation reads as "Fig. 2. (a) The mean soil moisture content (SMC) and soil particle size (SPS) at experiment sites (Table 2), and (b)topography of the study area, with numbers in parentheses representing elevations and the yellow dashed lines delineating the boundaries of the transitional zones."

9. Caption of Fig. 3 on page 1922: replace “soil moisture (SMC)” with “soil moisture content (SMC)”

Yes, we agree.

10. Caption of Fig. 4 on page 1923: replace “water table (GWL)” with “Ground Water Level (GWL)”

Yes, we agree.

Please also note the supplement to this comment:
http://www.hydrol-earth-syst-sci-discuss.net/8/C668/2011/hessd-8-C668-2011-supplement.pdf

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 1895, 2011.