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Hydrology and Earth System Sciences Discussions

Interactive comment on "Estimation of evapotranspiration in the Mu Us Sandland of China" *by* S. Liu et al.

X. Li (Editor)

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The two reviews of the manuscript entitled "Estimation of evapotranspiration in the Mu Us Sandland of China" have been received. Both of the referees are satisfied with the revised manuscript. The Sections of Method and Data and Conclusions have been significantly improved. The scientific significance is ranked as excellent by the two referees, and the scientific quality is ranked as good.

However, the paper still needs a minor revision according to the referees' comments. The authors are suggested to carefully consider the referees' recommendations for revisions, make the necessary changes, and respond to the editor with a point-by-point response of how you have addressed each concern.

In addition, a technique revision is needed. It is suggested that the paper to be edited by an expert in English.

The two referees' comments are enclosed as below:

Referee's report #1 The revised manuscript basically answered my questions. Net radiation is verified, more data are used to validate the ET model, and the conclusion section is much improved to clarify the scientific implication. The scientific content is basically acceptable. However, I suggest the authors improving the text description and, particularly, removing language errors. The following shows several examples but the authors should check the text thoroughly.

(1) Abstract: with the average annual ET increased from 230mm in the west to 350mm in the east spatially–>'increased' should be replaced with 'varying' (2) P3: "the four sandlands in China"–>"the four largest sandlands in China" (3) P5: "1300 m above sea level"–>is this the averaged elevation? (4) P5: "while GIDS (Gradient plus Inverse-Distance-Squared) method for precipitation"–>A reference may be required or you have to explain this method. (5) P9: "psychrometic constant"–>"psychrometric constant" (6) P9: "total radiation" should be "global solar radiation" (7) P14: "the spatial distributing trend of ET was almost consistent as increasing from west to east."–>Not understandable (8) P15: It was between 30 and 70mm in 1996 and 2004 with negative departure in 1983, 1989, 1993, 1994 and 2005, respectively.–>Not understandable (9) The results above show that ET and precipitation can reach a low equilibrium within each month generally–>what is "low equilibrium"? (10) "followed a single peak normal distribution"–>No evidence for a NORMAL distribution. "followed a single peak distribution" sounds better. (11) Suggest moving Figure 8 to Section 2.1. Precipitation is an important background of this sand land. It was introduced too late.

Referee's report #2: General comments Compared to the last version of this manuscript, the quality of this version improved much, especially in the description of methodology, presentations and discussions of the results. recommend this paper

to be published in HESS.

Specific comments; P2L2-4: It will be readable if change “Evapotranspiration(ET) in Wushen County, located in the Mu Us Sandland of China, was 3 estimated by Advection-Aridity Model based on the complementary relationship hypothesis with 4 reflectance data of NOAA/AVHRR and MODIS, meteorological data etc. from 1981 to 2005.” to “Evapotranspiration(ET) was estimated by using Advection-Aridity Model based on the complementary relationship hypothesis with NOAA/AVHRR and MODIS reflectance, meteorological data etc. from 1981 to 2005 over Wushen County located in the Mu Us Sandland of China.” P2L6L8ïijŽThe sentence “forcing energy balance closure” is not easy to be understood P7L11ïijŽThe empirical constants of this formula are may not be variable at different land surface, how do you build up these values? By the way, is there any validations about this formula? P10L13ïijŽHow to build up formula (10) P24P25P25: Table1 and figure1 are duplicated, to plot the sites in Figure1 add the contacts of table2 and table 3 into the text could short page limitation.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 5977, 2009.