

Interactive comment on “Simulation of the soil water balance of wheat using daily weather forecast messages to estimate the reference evapotranspiration” by J. Cai et al.

Anonymous Referee #1

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General

The paper is of great interest for the readers of Hydrology and Earth System Sciences, not existing preceding in the main substance of the paper: use of daily weather forecast messages as model input. The focus could be applied in another irrigation region, notably broad discussion is presented about the results in terms of model calibration and validation, and model predictions when ETo is estimated from weather forecast messages. The results and conclusions obtained are consistent with the objectives. Application of weather forecast messages should be implemented with farmers advising service. In many regions of the world there are not agrometeorological stations

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(local stations). The proposed methodology could apply to a farmer advising service with low cost, thus improving the efficiency of irrigation in these regions. The paper should be published but it needs a revision of something details. I suggest specific comments that could be considered before the publication.

Specific -Page 704, line 27-28. The actual crop ET is computed using the single crop coefficient approach (Allen et al., 1998) as a function of the available soil water when it is below the non-stress threshold. What is the influence of non-stress threshold?

- Page 706-707. Maybe the equations of statistical indicators used are not necessary to include them, since it refers to where they are published. Include the indicators used and their relationship with the goodness of the results.

- Page 707, line 5. Change 1'0; 1.0.

- Page 709, line 5. You mention treatments W2 and W3; (Correct W4), but you do not mention T3 and T4, in relation about figure 4.

Tables and figures Fig. 1b. Precipitation and ETo Units?. The period of study is 2005-2007, but you use 1995-2005, Why? Have you got data?.

Fig 2a and 2b. Suggest put the same precipitation scale in two figures. Change in figure 2a.

Fig 5 and 7. You can delete them and the relatives' sentences about it. The information is in Tables 5 and 6.

Table 1. Particle density or Bulk density?

Table 2. Treatment W3 / Mid-season stage / 2005-06. There is an error with the data (05/04). I suppose that it was 05/05.

Irrigation depths between treatments are very different, as discussed (page 703, line 21) due to the different distribution of rainfall. While in 2007 there is more rainfall (with a rainfall of 40 mm on May 15 at the end of the cycle) in the second year mentioned

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the need for greater irrigation depths in all treatments except for treatment W4. Why? Why do you apply four irrigation in 2006-07 and three in 2005-06? Is it relative to fertirrigation?. This situation can be influence in the results (over- or underestimation).

Table 4. There is a super index in Dates. What is the meaning of?

References Page 713, line 6; doi it is not necessary.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 697, 2009.

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6, S386–S388, 2009

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