

## ***Interactive comment on “Determining irrigation needs of sorghum from two-source energy balance and radiometric temperatures” by J. M. Sánchez et al.***

### **Anonymous Referee #1**

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#### General Comments

The authors provide a detailed validation of surface energy modeling to estimate actual ET based on approximately 1000 hourly and 70 daily weighing lysimeter measurements. The methods are clearly presented with some omissions of justification of parameter assumptions aside. The writing is clear and logically structured. Some minor editing issues are discussed below. Page limitations likely reduce additional discussion on the assessment of modeling assumptions and in the conclusion of the implications of the study. Overall, however, the study provides an in depth validation

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of energy balance models with detailed in situ measurements that has implications for local to regional applications of ET estimates.

#### Technical

Abstract Line 12 – Should “accumulated crop water” read “Estimated accumulated. . .”

p. 3938 Line 23 – p.3939 Line 6 – The biofuel discussion seems to be a bit of a side-track. The discussion can likely be generalized to water use efficiency topics beyond local considerations.

p. 3941 Line 3 – Extra parenthesis

p. 3942 Line 29 – Adjacent here suggests directly adjacent to experimental field? Or ref Fig 1?

p. 3946 Lines 17 – 20 – Incomplete sentence or should be reworded: “Thanks to the wide field of view of the Apogee radiometers, and the deployment configuration, sampled values of TR, and estimated values of Ts, weighted for the sunlit and shaded portions of the two components.”

p. 3947 Line 23 – Compromising = compromised?

p. 3947 Line 27 – p. 3948 Line 6 – Provide brief summary of the instantaneous results here. All hourly and daily data used in regression analysis or sampled?

p. 3949 Line 18 – rephrase “and total cumulated ET for the study period was a 5% underestimated” e.g., was underestimated by 5%.

Fig. 8 – Can the line symbology be changed to provide more emphasis on the ET STSEB and ET lys estimates and measurements?

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 3937, 2011.

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