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Hydrology and Earth System Sciences
Discussions

Interactive comment on "The SPARSE model for the prediction of water stress and evapotranspiration components from thermal infra-red data and its evaluation over irrigated and rainfed wheat" *by* G. Boulet et al.

Anonymous Referee #1

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I would like to briefly clarify some of the review comments in response to the Author's reply.

P7141 L15-18:

What I was referring to is the difference between equation 26 from "parallel" version of SPARSE and equation 7 from "parallel" version of TSEB (Norman et al. 1995) and the need to elaborate on this difference in the manuscript as it can have quite significant impact on the results presented in section 4.

P7149 L18-19:

It is interesting that f_g=1 provided the best results for TSEB as in the previous studies it was shown that accurate estimation of f_g is quite important in senescent crops (e.g. French et al., 2007 and Guzinski et al. 2013). Was green or total LAI used as input to TSEB and SPARSE? It should be total LAI but from figure 5 it appears that green LAI could have been used.

Table 1 and Table 2:

In addition to bias it would be good if correlation was also shown in those tables.

Figures 7 and 9:

I meant that in figures 6 and 8 the legend says "Series model" and "Parallel model" while in figures 7 and 9 it says "series" and "parallel".

References:

French, A. N., Hunsaker, D. J., Clarke, T. R., Fitzgerald, G. J., Luckett, W. E., & Pinter Jr, P. J. (2007). Energy balance estimation of evapotranspiration for wheat grown under variable management practices in central Arizona. Trans. ASABE, 50(6), 2059-2071.

Guzinski, R., Anderson, M. C., Kustas, W. P., Nieto, H., & Sandholt, I. (2013). Using a thermal-based two source energy balance model with time-differencing to estimate surface energy fluxes with day–night MODIS observations. Hydrology and Earth System Sciences, 17(7), 2809-2825.

Norman, J. M., Kustas, W. P., & Humes, K. S. (1995). Source approach for estimating soil and vegetation energy fluxes in observations of directional radiometric surface temperature. Agricultural and Forest Meteorology, 77(3), 263-293.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 7127, 2015.