

Interactive comment on “Technical Note: On the Matt–Shuttleworth approach to estimate crop water requirements” by J. P. Lhomme et al.

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This is a very clearly written paper addressing one of the central assumptions of the Matt-Shuttleworth (M-S) 'one step' approach to estimating irrigated crop evaporation, i.e. that the Priestly-Taylor approach can be used with $\alpha = 1.26$ to represent the hidden (unpublished) conditions inherent in the FAO56 method. The authors demonstrate that α can vary and that this has a significant effect on the value of surface resistance that can be derived from a crop coefficient. They chose to illustrate the numerical effects on surface resistance using $K_c = 1$, which is effectively a 'one step' approach - how would the analysis have looked if they had chosen a different value of K_c ?

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Can the authors explain why the M-S approach seems to work better in semi-arid conditions rather than the sub-humid conditions that are supposed to be inherent in the FAO56 method?

It would also be useful if the authors included a further figure/table showing the net result of their different surface resistance values on actual evaporation - after all this is what is important in the end.

Overall an excellent contribution to this field of research and any future attempt to convert the calculation of irrigated crop water requirements to a 'one step' approach.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 4217, 2014.

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