

## ***Interactive comment on “Effect of the Revisit Interval on the Accuracy of Remote Sensing-based Estimates of Evapotranspiration at Field Scales” by Joseph G. Alfieri et al.***

**Anonymous Referee #2**

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- The manuscript addresses a key challenge in the estimation of evapotranspiration from satellite data, during the interval of satellite overpasses, i.e., the temporal interpolation question. This is an important topic and has many practical implications, including water management. - The main shortcoming of this paper is that it limits the analysis to the statistical approach only without clear discussion of the physical interpretation of (climate and surface) processes involved. E.g., how will ET vary between two satellite overpasses, and why? Such discussions may allow for more physically based upscaling methods than statistical. E.g., it is well possible to compute daily ET<sub>0</sub> using climate data measured at ground stations, which then can be used to upscale ET<sub>a</sub> (actual) evapotranspiration derived from satellite data, e.g., see Allen et al. (2001), Mohamed

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e al. (2004). - P4, l20, a bit lengthy paragraph to confirm a known fact that it is erroneous to assume clear sky condition, if it is not! - P5, l13, would be good to give map of sites to easily see different climate zones - P5, l15, give year from .... to ..... - P6, l3, Eq. 2, would have been easier to follow if the Penman-Monrieth equation is written complete as given in the reference (Eq. 6, p24 of Allen et al., 1998), and then give the new derivation. - P6, l3, Eq. 2, what is the difference between  $\lambda v$  and  $\lambda$  - P6, l14, would be good to briefly describe the interpolation methods, linear, spline, and hermite. Also the description of some parameters seems very short in some places, e.g., the autocorrelation calculation. - P 7, l10, would also be good to give the % of the RMSE. - P10, l25, it would have been interesting to test the statistical results derived from the analysis against actual upscaling of satellite-based ET results - There is some spelling and grammar errors

References: - Allen, R.G., Bastiaanssen, W.G.M., Tasumi, M., Morse, A., 2001. Evapotranspiration on the watershed scale using the SEBAL model and Landsat images, ASAE Meeting Presentation, Paper Number 01-2224, Sacramento, California, USA, July 30–August 1, 2001,.

- Mohamed, Y.A., Bastiaanssen, W.G.M., Savenije, H.H.G., 2004, Spatial variability of evaporation and moisture storage in the swamps of the upper Nile studied by remote sensing techniques. J. Hydrology 289:145–164.

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