

## ***Interactive comment on “How representative are instantaneous evaporative fraction measurements for daytime fluxes?” by J. Peng et al.***

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Comment on:

J. Peng, M. Borsche, Y. Liu, and A. Loew (2013) How representative are instantaneous evaporative fraction measurements for daytime fluxes? *Hydrol. Earth Syst. Sci. Discuss.*, 10, 2015–2028, www.hydrol-earth-syst-sci-discuss.net/10/2015/2013/, doi:10.5194/hessd-10-2015-2013

The manuscript addresses temporal upscaling specific time-of-daytime evaporative fraction (EF) to daytime EF. This is an important topic for making use of remote sensing in hydrological science. However, there are two points that Peng et al. (2013) should consider to improve their manuscript.

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1) Peng et al. (2013) have overlooked some related papers on the topic. It would be useful to incorporate the relevant context of these other papers into both the background / scene-setting section and also the discussion / interpretation of Peng et al. (2013); see the full list provided below.

a. While Brutsaert and Sugita (1992) draw attention to the impact of cloud fraction on the stability of the EF, this is more thoroughly investigated and modelled in Van Niel et al., (2012). It is important that Peng et al. (2013) relate their results regarding the impact of cloudiness on the EF to the previous findings made in these two papers.

b. Cammalleri et al., (2012) study the impact of ignoring ground heat-flux changes when upscaling actual evaporation when using the EF method. This is likely a worthwhile discussion point in the Peng et al. (2013) manuscript.

c. Peng et al. (2013) seemingly only concern themselves with scaling from specific time-of-day to daytime EF, there is no consideration of nocturnal actual evaporation (see Van Niel et al., 2011 and the references therein, specifically Dawson et al 2007 and Tolk et al 2006). To be useful for hydrology, estimates of actual evaporation should represent both daytime and nighttime flux under all-sky conditions, not just clear-sky conditions during the daytime. A discussion of this issue would be beneficial to Peng et al. (2013).

2) Peng et al. (2013) relies heavily on FluxNet data that are collected and made freely available by the FluxNet community. It would be constructive for the authors to formally acknowledge the FluxNet data and community in their acknowledgements section.

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