

***Interactive comment on “A framework for
upscaling short-term process-level understanding
to longer time scales” by W. H. Lim and
M. L. Roderick***

Anonymous Referee #1

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Thank you for the explanation, I finally see the point. please make sure to explain it well in the revised manuscript.

Technically you would do this type of sensitivity analysis in the other direction. I will explain what I mean: You have all the data, naturally you'll get the best correction if you use all the data (your "one day" correction"). Comparing the one day correction and the actual evaporation will give you the limit of your method, you cannot get more accurate than than the one day correction. However, what is really needed to know is how many days are needed for a good correction. To do that, you cannot take all the data and

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clump it to 2,4,...64 days because you are still using all the data. What I wanted you to do is pretend you only have 5 days (for example), choose 5 consecutive days at random, classify those to the 4 types ("seasons") and calculate a correction for each season. This is simulating a very short campaign for high frequency data, and nothing else existing. Obviously, unless you are very lucky you will not expect a very high quality correction. You can try many different random 5 days periods (or try all possible ones, there's only 267/5 if I remember the number of total days correctly). Now do the same with 10 days, than with 30... all the way up to the full dataset (you know the answer there). This will give you the answer for how long in your site (but I guess that it'll be ball park reasonable for many other sites in similar climate) do someone need to invest in a high frequency measurement campaign to get a good level of covariance correction function.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 6203, 2012.

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