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Hydrology and Earth System Sciences
Discussions

Interactive comment on "A site-level comparison of lysimeter and eddy-covariance flux measurements of evapotranspiration" *by* M. Hirschi et al.

Anonymous Referee #2

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Manuscript: A site-level comparison of lysimeter and eddy-covariance flux measurements of evapotranspiration

This manuscript reports on a long monitoring of evapotranspiration measurements obtained by different techniques. The topic is not novel, even if it benefits of the use of the lysimeter observations. The paper is generally well written and organized and easily to understand, except for the Figures, which should report on their caption the meaning of each of the used acronym. In the follow, I have included all the modification I retain necessary before the paper publication. Title: please avoid the use of the dash in between eddy and covariance Introduction: the authors should expand the number of studies similar to that conducted by them Methods and data: Figure 2 is not easy

to interpreter; Figure 2 should include the map of the site, with the footprint area of the micrometeorological EC tower Eddy Covariance measurements: it is not clear if the sonic and the IRGA have the same point of measurements; please explain. Is the level of measurement consistent with the presence of the roughness sub-layer; how the authors have determined it? At the end, which method (among those indicated) was used to correct the energy balance closure? Details should be added. In this case, the authors refer too much to studies conducted by others. Catchment water balance measurements The reason why the authors have applied this simplified hydrological water balance should be better justified. The temporal resolution of these estimates does not match with the EC resolution. The used approach appears too much simplified and the reason why some variables have been neglected should be indicated. How Qc was obtained? Additional measurements at the site How many soil temperature probes were used?. Sometimes the lack of EB closure may depend on the correct estimation of the G term. Please include specifics. Results The results are mainly affected by the choice of the authors to compare data with different temporal resolution of acquisition. This may be only justified from their wish to provide a suggestion to the readers. But this motivation does not appear into this paper. The BR correction procedure should be explained. In such a work, I would have expected to find at least the analysis of unstable and stable conditions of the EC fluxes. Finally, I have not evinced any message from this work, to improve knowledge of the scientific community. For these reasons, I only suggest Major Revision to this paper, to be reconsidered for publication.

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