

Interactive comment on “Technical note: An experimental setup to measure latent and sensible heat fluxes from (artificial) plant leaves” by Stanislaus J. Schymanski et al.

Anonymous Referee #2

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General comments This manuscript presents an experimental system to test our understanding of latent and sensible heat exchanges by leaves. The apparatus includes an artificial leaf that is intensely monitored to assess energy and mass (water) fluxes, allowing to compare prediction of conductance parameterizations and energy and mass balance equations with data obtained from a highly controlled setup. I find this contribution useful to pinpoint limitations in understanding and technical constraints on water and energy flow measurements. The manuscript is well written and thoroughly discussed and I only have some minor points to raise.

Specific comments The schematic figures 4 and 5 could be better integrated with the equations presented in the text, possibly presenting equation numbers in the figures

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themselves. In general it would be useful to refer more explicitly to equation numbers in the text and figures (see some suggestions in the technical corrections). It would be worth checking and commenting on the recent paper by Zwieniecki et al. “Stomatal design principles in synthetic and real leaves”. J. Royal Soc. Interface, DOI: 10.1098/rsif.2016.0535.

Technical corrections L85: delete extra “in” L178: refer to the Appendix equations L187: refer to Equation 1 regarding the energy balance Eq. 9: delete extra brackets in the numerator; add closing bracket after units in L202 L444: move this definition of n_p up to eq. A1, where the symbol is first used Table A1 (caption): missing reference to a figure (appears as “??”) Figures A2 and A3: the lines in the insets with black background are hard to see L502: “give” not “gives” (plural subject)

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-643, 2017.

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