

Interactive comment on “Variability in riparian zone potential and actual evapotranspiration in a 1st order agricultural catchment in Southern Ontario, Canada” by R. M. Petrone et al.

B. van den Hurk (Editor)

hurkvd@knmi.nl

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The discussion brought up by the anonymous reviewers makes a strong revision of the paper necessary. Apart from the many questions for additional details of the measurement strategy and a justification of the choice of the PT-equation for PET, the paper seems to suffer from a discrepancy between the goals set out in the introduction and the actual measurement campaign and analysis carried out. If it is the goal to make an inventory of spatial heterogeneity of evaporation over the (small) riparian area one must ensure (a) enough measurement points in space, (b) a large enough sample to explain (spatial) differences (to avoid that a suggested strong wind effect is based on only a single outlier in fig 2), and (c) additional analyses to make a distinction between atmospheric (wind, radiation, ...) and subsoil (ground water table, soil texture) control

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on the evaporation. My feeling is that the measurement strategy does not support the goal to make firm conclusions on the "typical" variability of AET within a riparian area, and definition of a more specific and modest goal of the analysis (one that can be supported by the available measurements) should be considered. Also, the analysis could be interpreted in a more general sense by making use of dimensionless quantities (like Bowen ratio's or indices expressing the partitioning of precipitation over evaporation, discharge and soil water change).

In addition to the large number of specific reviewer comments (that should be addressed by the authors) I would like to point at an apparent missing panel in fig 5 (RH?), the fact that nowhere in the text the length of the experimental campaign is mentioned, and an explanation why the +/- indication following the PET estimate in section 4.1 is so small, suggesting an unlikely accurate estimate.

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