



Sy estimation from parallel soil moisture and water table measurement

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In growing season evapotranspiration induces diurnal signal of soil moisture, and also of water table in shallow water table environments. Diurnal signal of water table was widespreadly used for estimation of groundwater uptake by plants. The limitation of all groundwater signal based methods lies in the difficulty of specific yield (Sy) estimation. This is a soil water storage parameter that strongly depends on both, the unsaturated soil moisture fluxes (recharge and evapotranspiration) and water table elevation.

Based on parallel soil moisture profile and water table measurements in a hydrophyte forest of Hidegvíz Valley experimental catchment at the eastern foothills of the Alps subdaily Sy values were calculated.

Estimated Sy values are significantly changed along the day. If you want to get accurate Sy value for ET estimation a representative period has to be selected within the day. For analysis Sy values were calculated as a late night average and as a daily average as well.

Estimated Sy values were compared to the results of some traditional Sy estimation techniques (particle distribution curve based, moisture characteristic curve based, etc.). Penman-Monteith reference evapotranspiration was used for evaluation of the ET values calculated from different Sy estimations.

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