



## **Extension of the vertical equilibrium model for soil water storage estimation**

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Soil water storage is an important variable for hillslope and catchment hydrology, but remains to be difficult to measure directly. We have previously presented the vertical equilibrium model (VEM) as a simple approach to estimate the daily dynamics of catchment-wide soil water and groundwater storage on the basis of groundwater-level observations, soil properties and an assumption of hydrological equilibrium above the water table (Seibert et al., 2011, Hydrol.Proc.). The VEM approach allows quantifying storage, storage changes and the interplay between saturated and unsaturated storage. Here we extend this approach by replacing the assumption of an equilibrium by that of a constant upward or downward flux, representing evaporation and infiltration. The results of these steady-flux based computations are compared with the original VEM approach.