



## **Modelling sub surface flow in an old agricultural terraced area using HYDRUS-1D. A multi criteria evaluation approach.**

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The Hydrus-1D model (Simunek et al., 1998), that numerically solves the Richards' equation, has been used to describe variably-saturated water flow in a grassed old agricultural terraced area located in the Vallcebre research area (Eastern Pyrenees, NE Spain). A split sample test has been performed to calibrate and evaluate the model using continuous records of soil water potential and soil water content. Results obtained with the calibrated soil hydraulic parameters showed good agreement with the field data during wetting cycles at relatively high water contents. However, measured pressure heads were slightly overestimated during periods of high evaporative demand and the model did not adequately simulate rapid soil recharge after dry spells.

In order to investigate the ability of the model to simulate the behaviour of the whole terrace, simulated deep drainage and surface runoff have been subsequently evaluated against continuous measurements of water table level and surface runoff at the outlet of the monitored terraced area.