



The use of the pedotransfer functions in a mountain hillslope: a study case in Valsassina valley (Italy)

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A simple, but physically based model (Troch et al., 2003) was applied to evaluate the reliability of the PTF's (Saxton et al., 1986) to represent the hydraulic conductivities of a hillslope in Valsassina valley, in Northern Italy. A high intensity rainfall was considered and the simplified model was run for a steep hillslope of 32 degrees and with a thin layer (60 cm).

The water table fluctuation during the event have been compared with water levels observed in a series of piezometers installed along the hillslope. The model was run under different hypothesis.

The hydraulic conductivities calculated adopting the PTFs' (Saxton et al., 1986) have been demonstrated not to represent the hydraulic characteristic of the hillslope properly, if compared with hydraulic conductivity measured by a Guelph permeameter.

This was probably due to the fact that the PTF's didn't treat the high hydraulic conductivities and the macroporosities in the upper layers that seemed to have a crucial role in the subsurface flow movement.