



Simplified dual continuum approach to modeling subsurface runoff from a hillslope segment

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Shallow subsurface flow usually takes place at the interface of well permeable surface soil layers and less permeable underlying soil or bedrock strata. This type of saturated downhill flow is often encountered in hillslopes of mountainous or upland watersheds. Typically, it occurs only for a short period of time as an immediate response to intense rainfall events. Within the proposed conceptual model, the flow in a hillslope can be regarded as superposition of two components: one-dimensional vertical component (variably saturated matrix/macropore soil water movement) and one-dimensional downhill component (saturated flow along the impervious or less permeable soil-bedrock interface). Illustrative example of the model application is provided. The research is funded under the EU FP6 project No. 505428 "AquaTerra", and the Grant Agency of the Czech Republic project No. 205/05/2312.