



On the hydrology of periglacial cover-beds. – An overview.

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In the formerly periglacial areas of Central Europe gelifluctates are a common phenomenon. They appear as loose stratified sediment accumulations covering the bedrock with thicknesses of approximately 0.5 to 1.0 metre. Due to their periglacial origin they usually contain varying portions of allochthonous matter (e.g. loess, sand drift, volcanic ash). By this, their physical and chemical properties differ significantly from those of the bedrock.

Concerning hydrological processes on hillslopes, periglacial cover-beds play an important role too. They have an effect on infiltration, percolation and water storage. However, on account of small scale variations in their composition they neither can be treated sufficiently as an aquifer dominated by pores nor as one dominated by fractures. Therefore, hydrological models usually consider cover-beds as a black box.

In order to provide a deeper insight into these problems, results from different case studies conducted in the uplands of southern Germany are presented. Data analysis obtained from experimental watersheds yield hydro-meteorological threshold values for the occurrence of interflow. Field experiments using sprinkler irrigation provide ideas about infiltration processes and preferential flow paths in cover-beds.