



The impact of periglacial cover beds on runoff generation in a small spring catchment, Ore Mountains

Katja Heller, Rico Hübner, and Arno Kleber

Geography Institute, University of Technology, Dresden, Germany (katja.heller@tu-dresden.de)

The knowledge of hillslope processes is essential to improve pollutant research and flood prediction. Relic periglacial covers are widespread on slopes of the central European low mountain ranges. Cover beds are assumed to be an important control factor for subcutaneous water flow paths.

Periglacial cover beds originated by solifluction, kryoturbation and accumulation of loess during Pleistocene times. Differences in bulk density, sediment type, as well as structure and rate of coarse clasts in the layers result in vertical disparity in hydraulic conductivity (anisotropy), leading to interflow.

This hypothesis has been testing in an ongoing study in a small spring catchment (6 ha) in the eastern Ore Mountains, south-eastern Germany, since November 2007. The study area is underlain by gneiss and is formed as a slope hollow. The cover beds consist of a 3-layer complex with upper layer, intermediate layer and basal layer. Soil water tension within the layers is measured with 76 recording tensiometers. Electrical resistivity tomography was used to monitor the spatial dispersal of soil moisture.

Results of hydrometrical measurements and of electrical resistivity surveys will be described and new findings on slope water dynamics will be presented.