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Spatial variation in infiltration patterns in a meso-scale catchment

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In the meso-scale Attert Catchment in Luxemburg a total of 10 experiments with a high intensity rainfall of 1 hour duration with Brilliant Blue tracer were carried out. Subsequently the soil under the experiments was excavated and pictures of the vertical infiltration patterns were made. The experiments were performed on locations varying in geology, hillslope topology and land-use. Preferential flow was seen to play a role in each of the locations. The origin of the preferential flow process varied between fingered flow, macropore flow and funneled flow and the patterns of the preferential flow were seen to vary strongly. In some cases however similarity of two infiltration patterns was found, even though there was a differing land-use or hillslope topology. The different infiltration patterns can be used in combination with inverse modeling to deduce information on spatio-temporal variability in infiltration.