



Wavelet Analysis In A Structured Clay Soil Using 2D Images

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The spatial variability of preferential pathways for water and chemical transport in a field soil, as visualized through dye infiltration experiments, was studied by applying wavelet transform analysis (WTA). After dye infiltration into a 4 m² plot located on a Vertisol soil near College Station, Texas, horizontal planes in the subsoil were exposed at 5-cm intervals, and dye stain patterns were photographed. All the digitised high-resolution dye images obtained were merged and the maximum dye infiltration depth and dye mass in the vertical direction were estimated. For both measurements WTA was applied.. The results are discussed in the context of multiscaling structure of preferential path-flow under field conditions.