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Combining GPR, TDR, and hydraulic inversion for obtaining a large scale effective hydraulic parameterization

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We use multi-channel ground-penetrating radar (GPR) to obtain large scale structural information and average soil moisture content for a study area. At a selected site a soil profile is installed with time domain reflectometry (TDR) to measure the temporal dynamics of soil moisture content of the different layers. These in situ measurements are used for 1D inversion of the effective hydraulic properties that can be used as state variables for numerical forward simulations at the larger scale.