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The Schäfertal-Catchment – An intensive research site within the TERENO Harz/Central German Lowland Observatory

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The Bode river catchment in the TERENO Harz/Central German Lowland Observatory is the central study area for water-related research at the Helmholtz Centre for Environmental Research - UFZ. As integral part of the TERENO observation network of the Helmholtz Association, an integrated monitoring and research concept joining hydrological, atmospheric, biodiversity-related, and soil physical research is currently being implemented. The observation concept has been designed following a nested catchment monitoring approach comprising highly instrumented, intensive research sites as smallest units.

We present an overview of the Schäfertal-Catchment, one of the intensive research sites within the Bode Hydrological Observatory. The central research goal is the long-term investigation of the catchment water budget and the feedbacks with climatic, pedological, geological, and ecological drivers. In this context three main research packages have been defined: (i) monitoring and modelling of water fluxes from the point to the catchment scale, (ii) soil-landscape-modelling, and (iii) investigation of biodiversity and ecosystem functioning. Within the Schäfertal several technologies for soil hydrological monitoring are combined in order to observe meso-scale vadose zone hydrological processes. In this presentation, the general research concept as well as conceptual approaches for the different specific research hypotheses are described. First results of ongoing monitoring activities are presented and discussed.