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Soil characterization and modeling of spatial distribution of saturated hydraulic conductivity at two sites in the Volta Basin of Ghana

One of the key parameters in hydrological and climate change modeling is a good estimation of the soil hydraulic properties in the region of interest. This study investigates the spatial distribution and variability of soil physical properties, with emphasis on saturated hydraulic conductivity (K_s) at two pilot sites in the Volta Basin of Ghana. It focuses on the potential of pedotransfer functions (PTFs) and artificial neural network (ANN) approach for estimating K_s . Saturated hydraulic conductivity was observed to be highly spatially variable; however, it can be estimated using selected PTFs and ANN for soils in the Volta Basin based on soil parameters that can readily be obtained from detailed soil maps.