Spatial modelling of soil properties within an experimental catchment

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The HOAL Petzenkirchen catchment, located in the prealpine area of Lower Austria extends to about 64 ha. It is intensively hydrologically monitored. To derive information about the distribution of soil properties within this catchment, soil samples were taken at 302 points of the catchment spaced in a regular 50 m grid. Sampling depth for each point was up to 75 cm, divided into three layers according to the most dominant soil horizons which finally lead to more than 900 samples for the test area. Each sample was analysed for texture, organic and inorganic carbon, pH and plant available P. Based on these data functional soil maps for different soil properties of the area will be developed and compared to results obtained from the genetically based soil maps which we had created in parallel. This methodology will show the general patterns of the soil properties which will be investigated. In a second step, potential explanatory variables such as slope, slope position, land use, draining area will be tested and hydraulic conductivity will be estimated to describe deeply the hydraulic physical soil parameters of the catchment.