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# Validation of a simple distributed sediment delivery approach in selected sub-basins of the River Inn catchment area

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For large areas without highly detailed data the empirical Universal Soil Loss Equation (USLE) is widely used to quantify soil loss. The problem though is usually the quantification of actual sediment influx into the rivers. As the USLE provides long-term mean soil loss rates, it is often combined with spatially lumped models to estimate the sediment delivery ratio (SDR). But it gets difficult with spatially lumped approaches in large catchment areas where the geographical properties have a wide variance.
In this study we developed a simple but spatially distributed approach to quantify the sediment delivery ratio by considering the characteristics of the flow paths in the catchments. The sediment delivery ratio was determined using an empirical approach considering the slope, morphology and land use properties along the flow path as an estimation of travel time of the eroded particles. The model was tested against suspended solids measurements in selected sub-basins of the River Inn catchment area in Germany and Austria, ranging from the high alpine south to the Molasse basin in the northern part.