



A fresh view on possible causes of early high hydrosedimentary connectivity in Central Germany during the Holocene

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In northern and western Central Europe it was often observed that despite Neolithic settlement activity in the catchment and more or less contemporaneous deposition of colluvial slope deposits the first fine-grained overbank sediments were deposited several millenia later (Brown et al. 2018). This time lag between first sediment mobilization on the slopes and first anthropogenic overbank sedimentation in contiguous higher-order valley floors is explained with a sediment cascade that leads to an initially low hydrosedimentary connectivity in these catchments (Houben et al. 2013, Notebaert et al. 2018). One prominent exception to this generally observed pattern is the lower Weiße Elster catchment in Central Germany that is located at the southern margin of the so-called Central German dry area (Mitteldeutsches Trockengebiet) in the rain-shadow of the Harz Mountains. In this catchment, large amounts of fine-grained overbank sediments were deposited in the lower Weiße Elster floodplain already since the Neolithic period (Tinapp et al. 2008).

New investigations in the lower Pleiße floodplain located some kilometres east of the lower Weiße Elster also revealed Neolithic overbank sediments. This demonstrates that early Holocene overbank deposition and therefore a high hydrosedimentary connectivity since the Neolithic is not a local phenomenon of the Weiße Elster river system, but might be a regional pattern in Central Germany.

Therefore, based on a comparison of available data from several hitherto investigated catchments in Central Europe that were settled since the Neolithic, this contribution discusses possible causes of the exceptionally early high hydrosedimentary connectivity between slopes and floodplains in Central Germany compared with other river systems in Central Europe, and shows research perspectives to further address this issue.

References:

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