



## **Estimation of sediment storage in Ardenne's floodplains (Belgium) during the last centuries**

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Estimation of the sediment storage in floodplains is the focus of several researchers. One of the main difficulties is to date alluvial deposits which do not contain organic matters or which are more recent than 200 BP. Consequently, we developed a relative dating method, based on the presence of iron slag. These residues have been produced since the end of the 14th century by the former metal works located near rivers of the Ardenne region. In order to use slag as a stratigraphical tracer, we dated the periods of furnace activity from historical studies and we analysed vertical slag concentration in alluvial silty deposits. These data allowed us to reconstruct the topography of several floodplains at the inception of the metal works, to evaluate sedimentation rates and to estimate lateral channel mobility. Given important deforestations due to the production of charcoal for the iron metallurgy, we observed an increase of the sedimentation rates during the last centuries..