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OSL dating of Holocene fluvial sediments of the Wiesent River in the Northern Franconian Alb (Bavaria, Germany)

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As part of the DFG SPP 2361 "On the way to the Fluvial Anthroposphere" we investigate the interaction between human activity and the floodplain environment of the Wiesent River, Northern Franconian Alb / Bavaria. The landscape of the catchment has been influenced by human activities at least since the Middle Ages through direct (e.g., water mills) and indirect (e.g., soil erosion) transformation processes, which is documented by alluvial sediments within the floodplain. These sediments can be used as natural archives for the reconstruction of the interaction between humans and the environment.
Establishing a chronostratigraphy of the alluvial sediments is essential for reconstructing the floodplain evolution and can provide important information about the transition from a natural to a human dominated fluvial environment. The chronostratigraphy is established by optical luminescence dating (OSL), which is a suitable dating method for fluvial sediments, as it directly determines the age of the sediments. However, OSL dating of fluvial sediments can be challenging due to insufficient bleaching of the sediments, but the general suitability of fluvial sediments from the Wiesent River catchment for OSL dating was demonstrated by Fuchs et al. (2010) in earlier studies.
In this study, we were OSL sampling an alluvial 3 m floodplain section at 5 cm intervals. The coarse-grain quartz fraction was measured following the SAR protocol by Murray and Wintle (2000). Here we present the first high-resolution results of the OSL samples from the Muggendorf site.

Session: *DEUQUA Session: Anthropogenic impact on the development of landscapes*
Keywords: *chronostratigraphy, optical stimulated luminescence, alluvial sediments, floodplain evolution, human activity*