



## **Geoarchaeological studies of a Middle-Neolithic circular enclosure near Velm, eastern Austria**

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A geophysical survey done by ground penetrating radar (GPR) of a middle-Neolithic triple ditch circular enclosure (German: "Kreisgrabenanlage") and its environs showed high reflections at 1.3 to 1.7-meter depth, which could not be explained by geophysical methods alone. These reflections especially occur at the locations of the posts belonging to the palisades of the enclosure as well as the adjacent buildings dating to the same period. Vibration core samples of post holes of the enclosure and of one building were retrieved to investigate the cause of the reflection. Additionally, one core was taken from the outer ditch of the enclosure to evaluate the potential of further geoarchaeological work on such structure. The core samples from the post hole bottom show more cementation of the sediment at this depth, which can be attributed to the stronger reflection seen by GPR. The core samples of the outer ditch show typical ditch infillings at the lower 2 meters expected from a site situated in an alluvial environment, with slope wash in the form of gravelly sand or silt. At the third meter the substrate changes to layers of clayey, low-energy water-lain sediments with signs of lamination and organic inclusions. Samples for radiocarbon dating as well as for pollen analysis were retrieved from those sediments. Preliminary results suggest that the core samples not only complement the interpretation of the GPR survey, but also show that the water-lain sediments found deep inside the ditch might function as an important archive for future paleoenvironmental studies for the middle-Neolithic period.