Geophyisical exploration of an intertidal archaeological site along the Belgian coast

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Intertidal areas are often rich in archaeology but they pose major technological challenges. A geophysical study was performed on a test site along the Belgian coast. The site was subject to peat & salt exploitation in Roman and Medieval times. Due to coastal erosion the Medieval settlement was lost to the sea. Today the archaeological evidence is buried beneath a few meters of sand. The goal of this study was to trace the remnants of peat digging and settlement structures, and map the pattern of (natural and man-induced) palaeochannels.

The study combined measurements at sea (ultra-high resolution seismic at high tide) and on land (electromagnetic induction (EMI) at low tide). Additionally some shallow cores were collected. Despite the salty environment the EMI results showed a distinct pattern that seems to agree with peat extraction. They are confirmed by the seismic data that show a complex pattern of interrupted, shallow reflectors believed to be peat horizons and possibly also wood or stone remains. The geophysical results agree well with old photographical evidence of the site, previous to the sand accretion. This study clearly shows the potential of complementary geophysical techniques for the archaeological exploration of intertidal areas.