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# Investigation of Holocene palaeo-hydrological changes using fluvial archives: A case study for Sakarya River terraces, NW Anatolia(Turkey)

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## Résumé

Holocene climate changes of the NW Anatolia is well-resolved by means of high resolution speleothem (Sofular Cave) and sedimentary (İzник, Çubuk Lakes and Black Sea) records. The Sakarya River, the major fluvial system of the region, comprise 3 stepped depositional terrace staircases located just to the south of the North Anatolian Fault at the Adapazari Basin. These terraces provide sedimentary record from 9-1.8 ka (T2), 1.2-1 ka (T1) and 0.7 ka-recent (T0) evidenced by luminescence and radiocarbon dating.

The sections are fully exposed due to excessive sand-mining, and formed of fine grained flood plain deposits exhibiting a layered stratigraphy. Despite the hiatus(s), these deposits have a potential to record and reflect the hydrological changes at the Sakarya River throughout the Holocene.

We investigate how these records coincide with major historical shifts in Anatolia and well-known Rapid Climate Change (RCC) events.

In order to construct an event stratigraphy, we detail the sections exposed at the terrace steps. In next future, we will map the changes in grain size, geochemistry, magnetic susceptibility, pollen presence and charcoal percent etc. These sections also include tree trunks buried within the bedload deposits and will be investigated by means of dendrochronology. It can also be supported by recent regional dendro-climatology data. By using this multi-proxy approach, we aim to detect the rapid climate changes (such as 8.2 and 4.2 ka events) evidenced in regional paleo-climatic records, changes in solar activity and also the critical hydrological events (such as frequent flooding periods) for the region.

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