

ESR20-027 - From Romans to the Anthropocene, from Carnuntum to Vienna: An Urban Anthropocene Field Lab

Abstract

The Anthropocene, a discussed potential new unit of the Geological Time Scale, is defined by the dominant anthropogenic influence on the environment and geological processes. Regional studies on the Anthropocene Transformation, the gradual growth of human influence, are rare, especially for urban environments. This project investigates the urban Anthropocene transformation of the Roman settlements of Carnuntum and Vindobona and Vienna's urban environments. Historical research focuses on the contrasting development of cities and their urban environment, and their manifold relations over time, in combination with (geo-)archaeological data and GIS-based models, based on the classification, thickness, distribution and growth of anthropogenic layers. Lithofacies, sedimentology and geochemistry of urban and peri-urban anthropogenic strata includes the downstream Vienna archive of fine-grained natural Danube deposits using sediment cores for, i.e. trace metals and artificial isotopes, and microplastic signals. Environmental systems modelling and an Anthropocene equation approach for the temporal and spatial growth of the anthropogenic layer(s) will be applied as a Carnuntum-Vienna Anthropocene field lab. The evolution of the ca.1950 Anthropocene geological boundary will be evaluated and identified using artificial radiogenic nuclides in fine-grained sediments as an auxiliary Golden Spike for the possible definition of the 'geological' Anthropocene.

Scientific disciplines:

Sedimentology (45%) | Archaeology (35%) | Environmental research (20%)

Keywords:

Anthropocene, geochemistry, geoarcheology, anthropogenic strata

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Further links to the persons involved and to the project can be found under
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