

Anthropogenic deposits – Vienna's Anthropocene

Meszar, Maria (Department für Geodynamik und Sedimentologie, Wien, AUT);

Lappé, Kira (Department für Geodynamik und Sedimentologie, Wien, AUT);

Hornek, Katrin (Universität für angewandte Kunst Wien, Wien, AUT);

Wagreich, Michael (Department für Geodynamik und Sedimentologie, Wien, AUT)

The term Anthropocene stands for the time of the rising anthropogenic influence on the Earth System and especially on geological processes. Potential Anthropocene geological units are thin but distinct and globally widespread, changes are long-lived or irreversible. Anthropogenic deposits under cities such as Vienna stretch from pre-historic and historic to recent times and are caused by a combination of human and geological forces. A new project, financed by the WWTF (Vienna Science and Technology Fund), investigates the growth of the Anthropocene signal in the urban environments of Vienna. "The Anthropocene Surge" (ESR17-040) is a unique interdisciplinary project, combining natural sciences, humanities and art, which is regarded as a chance for a holistic view on the Anthropocene, its stratigraphy and perception.

The key hypothesis of the project is the Anthropocene surge, the accelerating and propagating wave of human influence on the environments and urban geology. The main research question is how the Anthropocene evolved in the urban environments of Vienna and what anthropogenic markers can be identified.

Firstly, the project aims at a genetic classification of anthropogenic sediments to develop the stratigraphy of Vienna's Anthropocene growth. The record of the Anthropocene surge in the sedimentary archive will be investigated with geochemical methods to detect trace metal contamination.

Secondly, the geometry and topography of anthropogenic units and horizons will be incorporated into a GIS and build the basis for a 3D model of the anthropogenic units, showing not only their present form but also their evolution in time. Historical maps, as e.g. by the famous Austrian geologist Eduard Suess, will be added to the model to implement and review the mid-19th century growth of Vienna.

Thirdly, an essay film will be created accompanying the research and reflecting on the trajectories of the Anthropocene within different fields and methods. By recording the flow of scientific samples from humanly modified ground to a 3D modeled landscape, the points of contact between analog and digital stratifications and their potential interactions will be traced.