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ATHMEA: A three-dimensional model of the Eastern Alps

B. Székely (1), P. Szafián (2), W. Frisch (3), J. Kuhlemann (3), M. Danišík (3), I. Dunkl (4)

(1) Space Research Group, Institute of Geography and Earth Sciences, Eötvös University, Budapest, Hungary (2) Department of Geophysics, Institute of Geography and Earth Sciences, Eötvös University, Budapest, Hungary (3) Institute of Geosciences, University of Tübingen, Germany (4) Sedimentology and Environmental Geology, Geoscience Center,University of Göttingen, Germany

The complex geological structure of the Eastern Alps has been studied for more than two centuries. The vast amount of knowledge accumulated in the past as well as the increasing computer power and 3D applications have made it possible to present the first ever high-resolution 3D geological model of the Eastern Alps. This model, ATHMEA (A THree-dimensional Model of the Eastern Alps) is aiming at a geometrically consistent, geologically feasible, space-filling model with simplified and unified geological units. The target resolution of the model was 5 km in both N-S and E-W directions while the vertical resolution depends on the geometry of the individual units.

The model has been deduced from basic geological and seismic sections and the 3D setting has been extended to the neighbouring cross-sections so that in perpendicular sense the defined units can be considered feasible. Some constrains were built in due to the technology of creation: the so-called compact body concept has been applied.

Certainly ATHMEA presented here is by far not free of contradictions from geological point of view: it is a target of continuous update and the current issue represents the result of data integration. Further amendments will reduce the differences between the model and the observed reality.

To make ATHMEA available for the research community, it will be published on digital media containing all relevant information in digital format usable in various GIS platforms and mapping software.