

THE MULTIFUNCTIONAL GEOLOGIC DATASETS OF AUSTRIA (1:1.500.000) – INCLUDING A NEW CLASSIFICATION SCHEME FOR “TECTONIC BOUNDARIES”

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fault data base, Alpine geodynamics, Austria

Austrian geology has been studied for more than a century and the results have been published in several geological maps on different scales. In order to understand tectonic evolution in such a complex environment as the Alps, the knowledge about the occurrence and emplacement of lithologic and tectonic marker units as well as the movement along major fault systems is the key for the development of kinematic models.

We present here the first approach to combine different aspects of Austrian geology in a cohesive multifunctional dataset at the scale 1:1.500.000. This dataset is based on published geological maps of Austria and includes lithologies, tectonic units and tectonic features. It is published as a Web Map Service at the Geological Survey of Austria and should serve as a common source for structured regional geodynamic knowledge.

The lithology layer includes bedrocks and synorogenic igneous rocks of the Variscan and Alpine orogens, as well as sediments of the Cretaceous Gosau-Group and from Cenozoic basins. In addition, the layer of tectonic units comprises hierarchically structured units from orogen/lithospheric plate down to nappe systems.

In the layer of tectonic lines and boundaries, we collected information about the location, orientation, timing and kinematic constraints of faults published in various sources. This lead to a platform where, for the first time, at least basic information about major tectonic boundaries (fault systems) in Austria and its surroundings is given in a searchable way.

This multifunctional dataset can be adapted and extended with additional data such as the attributes for nappe boundaries, the metamorphic grad of tectonic units at different times or the chronostratigraphic information for the lithological units.

The terms and names used in this Web Map Service are defined and available in the Online Thesaurus of the Geological Survey of Austria (<https://www.geologie.ac.at/services/thesaurus>).