

# SYSTEMATIC MODELLING OF THE JURA FOLD-AND-THRUST BELT (SWITZERLAND): AIMS, METHODOLOGY AND CURRENT STATE OF IMPLEMENTATION

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The Swiss Geological Survey has started a systematic 3D geological modelling of the Jura fold-and-thrust belt in North-western Switzerland (Jura3D). The semantically and geometrically harmonised vector data of the Geological Atlas of Switzerland 1:25000 is the starting point for the realisation of Jura3D. In the subsurface, however, a holistic harmonisation of the data has not yet taken place. Therefore, the geological profiles, borehole data and geophysical data form a heterogeneous data set that differs significantly in terms of data density, recording quality, level of detail and, in particular, geological interpretation. For Jura3D - as for other geological 3D models - a comprehensive geological interpretation in the model area, taking into account the available data, is essential and at the same time the greatest challenge.

Jura3D consists of a dense network of intersecting geological profiles (fence diagram) oriented perpendicular and parallel to the strike of the Jura fold-and-thrust belt, including modelled fault surfaces and one fully modelled lithostratigraphic reference horizon. Jura3D thus forms a harmonised 3D geological model with a high level of detail that can be easily controlled and adjusted in the future.

As most of the modelling work is carried out by external contractors under the coordination and supervi-

sion of the Swiss Geological Survey, a set of clear and uniform guidelines have been introduced: 1) tectonic concept, 2) stratigraphic concept and 3) modelling methodology. This approach guarantees the production of a harmonised three-dimensional model of the Jura fold-and-thrust belt.

We present the general approach of Jura3D, then focus on the tectonic concept as a guide for 3D geological modelling and show the current state of implementation of Jura3D in the first model area.