LONG-PERIOD MAGNETOTELLURIC SURVEY FROM THE BLACK FOREST THROUGH THE WESTERN ALPS TO THE PO BASIN

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Magnetotelluric (MT) soundings in the period range of 8s to 100000s were carried out along a 400-kilometre-long North-South profile from the Black Forest through the Western Alps, with focus on the Ivrea Zone, to the Po Basin. Several RAP-Stations, MT devices developed at the University of Göttingen, were mounted to collect data between October 2008 and May 2009. The survey aims to investigate the evolution of the conductivity structures in the lower crust and mantle along the profile. MT-transfer functions were calculated to investigate the interruption of the intracrustal and asthenospheric high conductivity layers under the European Alps. Furthermore Sq-variations were considered to find out more about the structure of the upper mantle. First results with models made by MT-forward modelling are presented and additionally a comparison with seismic studies in the target areas and particularly about the Alpine Crustal root in the Po Plain is provided. First results indicate a lithospheric thickening under the collision zones.

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