

ANALYSIS OF LONG PERIOD MAGNETOTELLURIC DATA MEASURED IN REGIONS AFFECTED BY VOLCANISM IN GERMANY

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In 2008, we carried out an eight months magnetotelluric campaign. The stations were placed along a 400km profile from the middle of Germany to the west of Germany. The profile crosses areas which were affected by extensive intraplate volcanism in the past, like the Leine Valley near Göttingen and the Rhenish Massif in the west. The volcanoes besides the Leine Valley were formed in the Cenozoic whereas some of the Eifel volcanic formations in the Rhenish Massif belong to the youngest in central Europe.

Seismic surveys found evidence for a mantle plume beneath the Eifel volcanic fields. This conclusion couldn't be ratified with magnetotelluric surveys. But it was found a crustal conductivity anomaly similar to a crustal conductivity anomaly below the volcanoes close to the Leine Valley. Furthermore at long periods there is a consistent WE strike direction in the whole area between the Rhenish Massif and the Leine Valley, which can be identified with an anisotropic structure in the upper mantle. This effect isn't observed in southern Germany as a reference station shows.

Using a 3D model that includes the entire area, we hope to uncover more details about the structures in the upper mantle and deeper crust that may be consulted as an explanation of the volcanism.

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