LONG PERIOD MANGETOVARIATIONAL STUDIES OF CRUSTAL AND MANTLE STRUCTURES RELATED TO VOLCANIC AREAS IN WESTERN AND CENTRAL GERMANY

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In 2008, we acquired long period electromagnetic data with a high data quality up to periods of 100.000 seconds along a profile running across the Leinegraben near Göttingen to the western Eifel, crossing the Rhenish massif. The Eifel as well as the region around Göttingen saw at different times intercrustal volcanic activity. Previous studies found big, highly conductive crustal anomalies located under the Eifel and near Göttingen. Between those anomalies, the conductivity of the mantle is raised in the east-west direction.
Our data are complementing a large data set that is giving good spatial coverage of the area. Using geomagnetic depth sounding, we aim to improve the understanding of the structure of the crustal conductivity anomalies on both ends of the profile and will investigate their relationship with the upper mantle anisotropy in the area. One hypothesis is that the anomalies could have been produced by a single mantle plume.

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