BGP-T9: **Visualization of fault pattern in Permo-Mesozoic sediments of the Bad Staffelstein area, N Bavaria**

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The Franconian fault zone in E-Bavaria separates Variscan basement rocks in the E from Permo-mesozoic sedimentary units in the W. Repeated activity during Permo-Triassic and Cretaceous has formed a complex fault pattern in the Variscan foreland which in N-Bavaria is prominent in the Kulmbach-Staffelstein area. Further on in this area regional anomalies of the geothermal gradient have been identified from borehole data which suggest an increased geothermal potential (Bauer 1999). In this context the connectivitiy of master-faults to the buried variscan basement rocks is of special interest.

In this study digital terrain models were made using high resolution airborne laser scan data (DGM1). Seismic data from the Dekorp 3/MVE-sections (e.g. Heinrichs et al. 1994) which transects the region in E-W trend have been evaluated using Petrel to identify deep reaching branches of the fault system.

Main target of the study is the Frankenalbfurche-fault system, a NW-SE trending graben structure. A structural model of the boundary of the Sengenthal- and the Dietfurt-Formation indicates the linkage of individual segments of the graben structure as more faults as previously known have been identified. Moreover there is strong evidence from seismic interpretation for deep-reaching faults which connect the cover units with the Variscan basement. Such faults could serve as pathways for fluids and associated convective heat transport.

References

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Heinrichs , T., Giese, P., Bankwitz, E. (1994): DEKORP 3/MVE-90 (West)- preliminary geological interpretation of a deep near-vertical reflection profile between the Rhenish and the Bohemian Massifs, Germany, Zeitschrift für geologische Wissenschaften 22 (6), S.771-801, Gesellschaft für Geowissenschaften, Berlin 1994