

typological data cannot be identified unambiguously in any sample. On the contrary zircons from hornblende-plagioclase-gneisses are euhedral or subhedral. Their morphological characteristics are very homogeneous. The mean points of the zircon populations of all investigated hornblende-plagioclase-gneisses plot in the "S₁₂" and "S₁₃" fields of the zircon typology diagram of PUPIN (1980), and a plutonic protolith is inferred for the gneisses.

We interpret the amphibolites and orthogenic hornblende-plagioclase gneisses of the Stubach Group as two pre-Variscan rock types. However, their origin is not yet sufficiently constrained: They may have formed in a layered intrusion or in a layered gabbro sequence of an ophiolite complex or as leucocratic dikes within mafic rocks. In the latter case, an age difference between both rock types should exist. A U-Pb zircon dating of our samples is in preparation.

FRASL, G., FRANK, W. (1966): Einführung in die Geologie und Petrographie des Penninikums im Tauernfenster unter besonderer Berücksichtigung des Mittelabschnittes im Oberpinzgau, Land Salzburg. - Aufschluß, Sonderh. 15, Heidelberg.

LOTH, G., HÖLL, R. (1993): Zirkon-Untersuchungen an polymetamorphen Gesteinen aus dem zentralen Tauernfenster (Ostalpen). - Europ.J.Mineral., 5, Beih. 1, 272.

PUPIN, J.P. (1980): Zircon and granite petrology. - Contrib.Mineral.Petrol., 73, 207 - 220.

PETROPHYSICAL INVESTIGATIONS IN THE SOUTHERN BOHEMIAN MASSIF (AUSTRIA): DATA - ACQUISITION, - ORGANIZATION AND - INTERPRETATION

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Within the framework of a comprehensive geophysical study of the Southern Bohemian Massif (Austria) predominantly magmatic and some metamorphic rocks of the Moldanubian and Moravian Zone have been sampled for the purpose of petrophysical investigations.

Data-Acquisition: Laboratory measurements on 2600 samples established the petrophysical parameters *Density*, *Magnetic Susceptibility*, *Natural Remanent Magnetization* and *Königsberger Ratio*.

Data-Organization: Using the dBase IV - program package a special database system ("rockbase") running on a MS-DOS PC has been developed to facilitate organization and administration of petrophysical data.

Data Interpretation: According to geological and petrological considerations selected data files exported from the database are used as input files for commercial software, e.g. Grapher for Windows, to visualize the information contained in the

data set. In a first attempt, data of granitoids of the South Bohemian Pluton were used to check possible correlations.

TWO DIMENSIONAL INTERPRETATION OF THE GRAVITY FIELD OF THE SOUTHERN BOHEMIAN MASSIF

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The results of gravity map stripping performed for gravity effect estimation of well known crustal structures (crust-mantle boundary, Molasse sediments) and density deconvolution indicate the existence of a high density upper crust beginning at the eastern margin of the South Bohemian pluton. In order to develop a first view to the upper crustal structures two dimensional modelling is performed. Four profiles covering the main tectonic units of the Bohemian Massif and running more or less across the strike of the main gravity anomalies are selected. The Bouguer gravity calculated assuming variable reduction density and corrected regarding the gravity effect of the crust-mantle boundary is used as reference signal. Therefore, all models can be restricted to upper crustal structures as long as no further information is available about the crust-mantle discontinuity and density inhomogeneities within the lower crust. Important geometrical parameters like boundaries of causative bodies at the surface or the Molasse basement structure are controlled by geological maps and the depth distribution of the Molasse basement determined by refraction or reflection seismics and drilling.

Different model conceptions are presented. A common feature of all sections is a high density crustal block which begins at the eastern margin of the South Bohemian granite intrusion and extends far towards the East. It may be interpreted as deep reaching continuation of high density metamorphic rocks. In addition to the results of gravity map stripping mentioned above the analysis of rock samples obtained by drilling achieving the Molasse basement at different locations on both sides of the Mailberg fault supports this model conception. An alternative model partly explains the general positive anomaly pattern by the Brunovistulicum superimposed by Moldanubian and Moravian units.

The gravity high between Retz and Hollabrunn can be interpreted by the lateral density contrast between the metamorphic crust and the Thaya pluton (0.15 gcm^{-3}) or Molasse sediments ($0.3 - 0.4 \text{ gcm}^{-3}$) respectively, which is shaped like a horst structure in this area and contains a deep reaching zone of slightly higher densities. The sources of magnetic anomalies are supposed to be seated at its eastern flank. The local gravity high near Hollabrunn cannot be interpreted exclusively by an upwelling basement structure as detected by refraction seismics. Its amplitude can only be explained by an additional high density source close to the surface, which