arises, whether they represents already a different type of crust since the Proterozoic.

During the Ordovician, in the Helvetic domain, formation of eclogites and island-arc type metagranitoids indicate crustal shortening and, in the Tauern region, a comparable situation should have existed. In contrast, in the South-Alpine and Austro-Alpine domains, sedimentary sequences and volcanics resulted from Ordovician subsidence. A very large zone situated between the Helvetic and the Austro-Alpine domains, enregistered the intrusion of many granitoids, most of which needing still a precise geochemical definition to give a better insight on their specific palaeotectonic significance.

From the Silurian onwards, the Helvetic domain is supposed to undergo early collision of the continental margins, and the corresponding domains are interpreted to represent an active margin, whereas the passive margin has to be situated in the Upper Austro-Alpine and South-Alpine units. Since the Early Carboniferous, final collision occurs in the entire domain through asymmetric approach of the continental blocks.

Postcollisional evolution during the Late Carboniferous and Permian is accompanied by regional strike-slip, giving way to the formation of transtensional basins with detrital sediments and/or volcanics and the intrusion of many granitoids.

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RAUMER von, J.F., NEUBAUER, F. (Eds.) (1993): The pre-Mesozoic Geology in the Alps. - Springer: Berlin-Heidelberg-New York, 677p.

LATE CARBONIFEROUS - LATE PERMIAN PALEOMAGNETIC OVERPRINTING OF CARBONIFEROUS GRANITOIDS IN SOUTHERN BOHEMIAN MASSIF (AUSTRIA)

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Paleomagnetic investigations on Early - Middle Carboniferous granitoids (granites and mainly associated diorites) of the Austrian part of the so-called South Bohemian Pluton (48.5°N, 14.5°E) yielded two groups of ChRM-directions, one being characterized by SSW-declinations and positive inclinations and labelled A1 (D=200°, I=14°, k=67, N=6; VGP 31°N, 170°E), the other group (labelled A) having the same declinations but with negative inclinations (D=201°, I=-21°, k=88, N=18; VGP 48°N, 162°E).

The main carrier mineral of the A1-directions has been found to be magnetite (with unblocking temperatures in the range of 550 - 580 °C) while the A-directions are due to a low temperature mineral, interpreted as either pyrrhotite or titano-magnetite, with unblocking temperatures in the range of 300 - 400 °C.

Both magnetizations (A1, A) are considered as magnetic overprints due to distinct recrystallization processes that occurred under different hydrothermal and tectonic conditions. Briefly speaking, the GRANITOIDS investigated were emplaced in Early to Middle/Late Carboniferous whereas the period of acquisition of characteristic remanent magnetizations lasted from Late Carboniferous to Late Permian. This yields as an important result of this study that the magmatic and PALEOMAGNETIC history of a crystalline basement maybe slightly but significantly different, possibly with a rather short overlapping period.

3-D FORWARD MODELING OF THE BERCHTESGADEN MAGNETIC ANOMALY

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According to modern trends in seismics, 3-D algorithms gain more and more significance in interpreting magnetic and gravity data. Based on BARNETT (1976) a more simple expression for potential fields of arbitrary polyhedral bodies in three dimensions has been introduced by PEDERSEN (1978) showing that required calculations are simpler in frequency domain and therefore correspondingly faster. All these algorithms have requirements for special coordinate systems or coordinate transformations, which, under practical circumstances, need more calculations as well as additional computer capacity. HANSEN & WANG (1988) generalized the expression for the spectra of the potential field of homogeneous three-dimensional polyhedra.

This method has been applied for the computation of direct models of a low frequency magnetic anomaly ("Berchtesgaden structure", see Fig.1) observed in the Alpine margin in central Austria, SEIBERL (1991). Geological models are presented. Delimitations of these models are:

- the depth of the Curie isograde which is usually about 25 - 27 kms below surface (normal geothermal gradients provided) - bottom of the body.
- the surficial geological information, comprising the thickness of the overlying sequences (Northern Calcareous Alps, Rhenodanubian Flysch, Helvetic Nappes at least) - top of the body.