

## **EVOLUTION OF THE ARCHEAN/PROTEROZOIC CRUST IN THE SOUTHERN SÃO FRANCISCO CRATON NEAR PERDÕES, MINAS GERAIS, BRAZIL**

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The present study contains the investigation of an archean/proterozoic part of the lower crust. The studied area is situated in the southern part of Minas Gerais/Brazil, about 200 km south-west of Belo Horizonte, in the surrounding of the city Perdões. It is part of the basement of the São Francisco craton and contains charnockites, enderbites, orthogneisses, gabbroic rocks and ultramafic-mafic cumulates. The sequence shows the characteristic features of an archean bimodal igneous suite. The gabbroic rocks and the mafic-ultramafic cumulates occur as lense shaped, elongated bodies within the charnockitic-enderbitic complex. In the northern part of the studied area occurs an orthogneiss. The gabbroic rocks show a tholeiitic composition with typical REE-pattern for Archean tholeiites. The mafic cumulates and also the ultramafic cumulates (mainly peridotites, less common pyroxenites) could represent the cumulate-sequence of the gabbroic rocks. The enderbites are tonalitic/trondhjemitic in composition. The trace element pattern indicate an origin through partial melting of a basaltic rock with garnet as a residual phase, indicating a magma-source within mantle-depths, possibly in excess of 60 km. The charnockites which are granitic/granodioritic in composition were generated by intracrustal partial melting of probably tonalitic/trondhjemitic material. The magma-generation must occur at depths less than 40 km, where plagioclase is a stable residual phase. The charnockites, enderbites, gabbroic rocks and cumulates show a consistent PT-path. The rocks were probably generated under granulite facies conditions. During exhumation they underwent a strong retrograde amphibolite facies metamorphism. The last event was, in most of the cases, a weak greenschist facies overprint.