

**THE BAUXITE DEPOSITS OF THE ALKALINE MASSIF OF  
PASSA QUATRO (MG), BRAZIL**

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The bauxite deposits of the alkaline massif of Passa Quatro are of two principal types :

- the first one occurs in the northern part of the massif, at altitudes from 1800 to 2200 m. This isalteritic bauxite results from the direct "in situ" weathering of the nepheline syenite,
- the second type forms, on the surrounding metamorphic rocks, pediment surfaces with deposits coming selectively from the alkaline massif.

The study of a topographic sequence on the first type allows to describe one process of bauxite formation with preservation of the rock structure, and two processes of bauxite degradation which lead, at the top of the profile, to the formation of an alumino-ferruginous crust by partial remobilization and lixiviation of  $Al_2O_3$  and accumulation of  $Fe_2O_3$ , and, at the bottom of the profile, to the formation of kaolinite by resilicification of bauxite.

The geologic and geomorphologic aspects allow to consider three pediment surfaces, generically defined as superior and middle surfaces bearing the second type bauxites, and inferior surfaces.

The geological history of these bauxites has been influenced by the Paraíba do Sul rift formation. Between these two types of deposits, it can be established an interrelation which begins with the bauxitization and follows with the tectonic opening of the rift.

In the first bauxite type, two periods of bauxitization can be defined. The early one previous to the rifting is in connection with a "Sulamericana" planation surface. The other closes the evolution of the actual profiles on the massif and on the pedimentary deposits on which the morphotectonic action allows the individualization of the three surfaces.