

THE STRUCTURE OF THE PEDRA AZUL PLUTON AND ITS ENCLOSING ROCKS - DOMINGOS MARTINS, ESPÍRITO SANTO, BRAZIL

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In the state of Espírito Santo in Brazil from central to South various circular zoned intrusive bodies occur showing a compositional gradation from the border to the core from felsic to intermediate/mafic rocks. So does the pluton of Pedra Azul, however, at first sight this is not obvious in the geological map. A detailed study of the structural features of both pluton and host rocks was carried out to investigate on the mechanism of intrusion of this pluton. Geological profiles show that the Pedra Azul pluton is a zoned pluton with granite at the border to the enclosing rocks, passing to tonalite, granodiorite and diorite to the center. The structural features of the metamorphic host rocks of the Pedra Azul pluton like the dip of the metamorphic banding, axes and axial planes of the folds as well as the orientation of enclaves and lineation in the magmatic body were studied. Close to its borders the foliation of the enclosing rocks – paragneiss and quartzite – dips towards the center of the magmatic body indicating that these rocks are cropping out on the level of the deepest parts, the roots of the pluton. The magmatic flow, however, denoted by oriented enclaves and mineral lineation, plunges to NE. The magma intruded like a sill from this direction along an NE-SW plane with an inclination of approximately 65°, probably using the contact between the paragneiss and the quartzite, which crop out West and East of the intrusion.