

The Itajara-Pirapetinga and Serra do Catete Shear Zones, SE Brazil

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The Itajara-Pirapetinga and Serra do Catete fault zones are connecting splays that branch off asymptotically from the Paraíba do Sul shear belt. These arcuate fault traces cut through high-grade rocks (stromatic migmatites, charnockites, ortho- and paragneisses) of granulite retrogressed to amphibolite facies. Green to brownish granulitic gneiss is the main lithotype, showing centimetric to metric bands of amphibolite. Conformable lenses of ophthalmic feldspar porphyroclasts (up to 10 cm length) sometimes exhibits signs of a pervading microclinization. Pyroxene may be present in the granulites, while biotite and hornblende are a common association especially along the Itajara-Pirapetinga fault zone. In the Serra do Catete the quarried lithotype is a felsic granitoid, sometimes enriched in pink microcline, exhibiting extremely elongated quartz ribbons. A conspicuous and subhorizontal stretching direction lineation, fold mullions, which coupled with kinematic indicators, attest the right lateral character of the movement along these faults. In our days there are more than 150 artizanal quarries mining protomylonitic and mylonitic orthogneisses (biotite-gneiss in the Itajara-Pirapetinga and leucocratic granitoid in Serra do Catete, respectively), along these shear zones. The local quarrymen explore the mylonitic-gneisses' ability to split along smooth surfaces. The quarries have variable sizes (benches ranging from tens to several hundreds metres) and their plot on map, reveal an extreme alignment along the traces of these two zones.