

ARCHITECTURE OF POST-COLLISIONAL INVERSELY ZONED PLUTONS IN THE NEOPROTEROZOIC ARAÇUAÍ-RIBEIRA FOLDBELT

WIEDEMANN, C.(1); LUDKA, I.; MOURA, J.; MENDES, J. and MEDEIROS, S.(2);(1)IGEO-UnB, Brasília;(2)IGEO-UFRJ, R.J., Brazil.

Post-collisional magmatism (570 to 480 Ma) in the Araçuaí-Ribeira foldbelt is characterized by the predominance of high-K metaluminous, allanite-sphene-bearing granitoids. Smaller lenses of coronitic gabbro, anorthosite, pyroxenite and phlogopite-peridotite are also common in deeper exposed areas of this foldbelt. In the last 17 years, several large plutons (over 100 km²) were mapped by the authors and coworkers in a 1: 25,000 scale. In the region of southern Espírito Santo, the deep erosional level associated with a steep topography reveals the internal architecture of these intrusions: subvertical cylindrical roots grade to shallow angle dipping tops. Sills and dikes of basic and acidic magmas generally intrude the enclosing gneisses along ductile shear zones. The contact to the enclosing rocks is sharp in deeper eroded plutons (Santa Angélica, Venda Nova and Várzea Alegre). Where higher levels are exposed (Castelo and Pedra Azul), agmatic zones predominate along the borders. The igneous foliation is usually well developed and the schistosity of the surrounding gneisses wraps around the plutons. Each intrusion has an unique marble cake like (bimodal) internal structure: concentric patterns of more basic to intermediary cores are surrounded by interfingering lenses of basic to acidic magmatites. Syenomonzonite and granite predominate in the borders. Widespread evidence of mingling and mixing between two contrasting magmas of gabbroic and granitic or syenomonzonitic composition is found in all intrusive complexes. Probably due to lithospheric delamination following collisional orogenesis, the upwelling of hot asthenospheric magmas induced partial crustal melting. The interaction of these contrasting magmas originated the bimodal plutons.