

THE CHARACTERIZATION OF A NEOPROTEROZOIC BASIN IN THE CABO FRIO BLOCK, RIBEIRA BELT, BRAZIL – ND AND U/PB DATA

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The Cabo Frio Block, a structural domain in the Ribeira belt, in the coast of Rio de Janeiro State, comprises an orthogneissic basement and high-grade supracrustal sequences, both deformed during the Cambrian. The supracrustals (so-called Palmital and Búzios Units) are composed of four main lithofacies: (1) metapelites (kyanite-gneisses); (2) garnet-diopside-amphibolites and amphibolites, whose protoliths could be respectively marls and lavas; (3) calcsilicate rocks; (4) sillimanite gneisses, interpreted as having a turbidite protolith. The stratigraphic relation between these facies is poorly known due to a complex deformational history, with thrusts and nappes. The TDM model ages for the metapelites range from 1.7 to 1.5 Ga, confirming what previous workers interpreted as a mixing age between the 2.0 -1.9 Ga basement that crops out in the area and a younger source. Single zircon grains from the metaturbidites were analyzed for U/Pb conventional method, with $^{207}\text{Pb}/^{206}\text{Pb}$ ages varying from 950 to 700 Ma. Although they are discordant, due to the high metamorphic grade, a regression with zircons from the same population gave an upper intercept of ~1.0 Ga. The amphibolites, considered to be derived from basic magmas, presented a TDM model age of 1.0 Ga. This indicates a pulse of mafic magmatism in this basin during the early Neoproterozoic.