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DETRITAL ZIRCON PROVENANCE STUDIES AT CACHOEIRA AND IGUAPE METASEDIMENTARY SEQUENCES FROM CURITIBA AND COSTEIRO TERRANES – SOUTHERN RIBEIRA BELT (SÃO PAULO STATE)

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RESUMO: In the southeast region of the State of São Paulo, a distinct set of tectonic domains belonging to the Neoproterozoic Southern Ribeira Belt are delimited by important shear zones. Among these blocks, the Curitiba Terrane (Registro and Itatins Complexes) and the Costeiro Terrane (Paranaguá/Iguape Domains), which are separated by the Serrinha Shear Zone (SSZ), comprises the Cachoeira and Iguape Metasedimentary Sequences, respectively. These units, whose maximum sedimentation ages and provenance are still unknown, are still poorly studied. To fulfill the objectives of contributing with new isotopic and petrological data about these sequences, Detrital zircon U-Pb analyses were performed by LA-ICP-MS on two samples of each sequence, and petrographic analyses were carried on many samples from the studied terranes. The Cachoeira Sequence samples are represented by garnet-biotite paragneisses, garnet-biotite-sillimanite paragneisses, orthoquartzites and garnet-biotite schists with metamorphic peak between amphibolite and granulite facies, on the Second Sillimanite Zone. U-Pb analysis on sample K-40 revealed maximum deposition ages at approximately 750 Ma and metamorphism age at 597 Ma. On sample K-56 the maximum deposition age obtained was approximately 740 Ma and metamorphism age between 600 and 620 Ma. The provenance age distribution ranges between Neoproterozoic and Paleoproterozoic sources. Iguape Sequence samples are represented by low-to-medium grade metamorphism biotite-sericite fine schists, meta-rhytmities, metamarl and quartzites, at greenschist facies, on the Biotite Zone. U-Pb analysis on sample K-152 revealed maximum deposition ages from 600 to 610 Ma and metamorphism age at 575 Ma. On sample K-162 the maximum deposition age obtained was of approximately 603 Ma. The provenance age distribution ranges between Neoproterozoic and Mesoarchean. With the obtained isotopic data, the original tectonic environments from the Cachoeira and Iguape paleobasins were determined using models constructed with detrital zircon records. The Cachoeira Sequence was labeled as a paleobasin originated from a convergent tectonic environment and the Iguape Sequence as a paleobasin originated from a collisional tectonic environment. New detrital zircon samples from both sequences are being prepared for LA-ICP-MS. In addition, fluid inclusion microthermometry is being carried to better constrain metamorphism conditions.

PALAVRAS-CHAVE: DETRITAL ZIRCON, LA-ICP-MS, U-Pb METHOD, SOUTHERN RIBEIRA BELT, NEOPROTEROZOIC