

A COMPARATIVE REVIEW OF U-PB AGES OF DETRITAL ZIRCONS FROM NEOPROTEROZOIC METASEDIMENTARY SUCCESSIONS IN BRAZIL AND ADJACENT GONDWANA: TECTONIC IMPLICATIONS OF PROVENANCE DIVERSITY

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RESUMO: This work presents a compilation of thousands of U-Pb ages of detrital zircons from Neoproterozoic metasedimentary successions of several Brasiliano-Panafrican orogenic belts in Brazil and Africa. The diversity of age distribution of these voluminous zircon reservoirs is discussed in relation to paleogeography and tectonic style. The age patterns of the different Neoproterozoic basins can be useful tools for studies of detrital zircon content of Paleozoic sedimentary basins of Gondwana and their Mesozoic-Cenozoic successors. By the Cambro-Ordovician times, a large number of collisional mountain belts formed during the Brasiliano-Panafrican orogenies that led to the amalgamation of the Gondwana supercontinent. Since then, these mountain belts have acted as the main source of detrital material for subsequent Phanerozoic sedimentary basins of Gondwana. Geological maps show that the eroded remains of these former mountainous source areas is made up of three components: orogenic granites, reworked Archean-Paleoproterozoic basement complexes and metasedimentary rocks. The latter were deposited in Neoproterozoic-Cambrian sedimentary basins developed along the passive (and active) continental margins of the Archean-Paleoproterozoic cratonic blocks. For each metasedimentary succession in a given locality, one single histogram combines all datasets from all local samples. The datasets were then subjected to the same filtering criteria, such as age discordance, and plotted in comparative histograms of uniform display and choice. For example, the $^{206}\text{Pb}/^{238}\text{U}$ age was always used when below 1000 Ma, instead of the $^{206}\text{Pb}/^{207}\text{Pb}$ age. The age sets of the several zircon reservoirs, through large geographical areas, show a wide

diversity of zircon-age signatures. Some areas show a large proportion of zircons of metamorphic or granitic origin, formed during Brasiliano collisional episodes. Other successions display important contribution from pre-collisional magmatic arc igneous rocks. The zircon age distribution from Paleoproterozoic-Archean basement complexes provides distinct signatures along different orogenic belts.

PALAVRAS CHAVE: GONDWANA; PROVENANCE; ZIRCON.