

## PALEO- TO MESOPROTEROZOIC CRUSTAL SOURCES FOR THE IGNEOUS FELSIC ROCKS OF THE COSTA MARQUES REGION, SW AMAZONIAN CRATON, BRAZIL: EVIDENCE FROM PRELIMINARY SHRIMP U-Pb ZIRCON AGES AND Hf ISOTOPES IN ZIRCON

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Three distinctive felsic igneous suites have been recently recognized in the Costa Marques region: Ouro Fino (OFIS,  $1347 \pm 9$  Ma), São Domingos (SDIS,  $1057 \pm 10$  Ma), and Costa Marques intrusive suites (CMIS,  $998 \pm 10$  Ma). Two additional samples from SDIS yield SHRIMP U-Pb zircon ages of  $1086 \pm 12$  Ma and  $1754 \pm 22$  Ma (CM-02, alkali-feldspar granite), and  $1083 \pm 6$  Ma and  $1375 \pm 7$  Ma (CM-12, quartz-syenite porphyry). The  $1086 \pm 12$  Ma and  $1083 \pm 6$  Ma are interpreted as the crystallization ages, and the  $1754 \pm 22$  Ma and  $1375 \pm 7$  Ma as the inherited zircon age. Thus, the SDIS crystallization ages vary from 1086 Ma to 1057 Ma. Zircons from the 1347 Ma quartz-syenite (OFIS), 1086 to 1057 Ma granites and quartz-syenites (SDIS), and 998 Ma trachyte porphyry (CMIS) show  $\epsilon_{\text{Hf}(t)} = +0.1$  to  $+2.9$ ,  $-20.4$  to  $+2.7$ , and  $-6.2$  to  $+5.4$ , respectively, suggesting variable crustal and juvenile source contributions to the felsic magmas. The 1754 Ma and 1375 Ma inherited zircons show  $\epsilon_{\text{Hf}(t)}$  varying from  $-19.6$  to  $-14.4$ , and  $-1.9$  to  $+0.8$ , and  $T_{\text{DM}}(\text{double-stage})$  ranging from 3.6 to 2.3 Ga, and 2.1 Ga, respectively. Inherited zircon ages (1754 and 1375 Ma), and  $T_{\text{DM}}(\text{double-stage})$  ages of all samples (3.6 to 1.5 Ga) indicate the involvement of Archean, Paleo- and Mesoproterozoic crusts for the felsic magma genesis. Our results suggest: 1 - Three magmatic events within the time interval of ca. 350 Ma; 2 - Variable crustal and mantle source components for the magma genesis; 3 - Paleo- to Mesoproterozoic crustal source with probable contribution from Archean material.