The young guys are in town: a ~500 Ma U-Pb Shrimp age for the Santos and Guarujá granites extends further south the Ribeira "G5" magmatism

Valdecir de Assis Janasi[1], Oswaldo Siga Jr. [1], Kei Sato[1], Fabio Braz Machado[2]; Adilson Viana Soares Junior[2]; Ana Olivia Barufi Franco de Magalhães[3]; Andrea Venancio Machado [4]
[1]USP; [2] UNIFESP; [3] UnG ; [4]UNESP

RESUMO:
Neoproterozoic granitic magmatism is voluminous in all domains of the crystalline basement in the State of São Paulo, and has been shown to have peaked in the 630-590 Ma interval in most of them, e.g., in the Apiaí-São Roque Domain and Socorro-Guaxupé Nappe, where the ~590-580 Ma post-orogenic Itu Granitic Province marks the end of the main granite-forming period. The picture is different in the Ribeira Belt, and especially in the Costeiro Domain, where granite magmatism appears to be systematically young, as suggested for instance by previously reported ages ~565 Ma for the foliated Ubatuba Charnockite. Recent LA-MC-ICPMS zircon dating of the Ilha Anchieta Quartz Monzonite, which intrudes Ubatuba (Azevedo Sobrinho et al., 2011, *Anais da Academia Brasileira de Ciências*, **83**: 891-906), has shown that the ~500 Ma "G5" which was known to extend from south Bahia to Rio de Janeiro (Pedrosa-Soares et al., 2001, *Precambrian Research*, **110**: 307-323; Valeriano et al., 2011, *Journal of South American Earth Sciences*, **32**: 416-428.), is present in the Costeiro Domain of São Paulo. Suspecting that other plutons from this domain shown by regional geologic mapping to be "post-orogenic" could belong to the same episode, we dated granites that dominate the landscape of the city hosting the 46th Brazilian Geological Congress (Santos and Guarujá plutons) taking advantage of the recently installed Shrimp facilities at the Instituto de Geociências USP. The obtained concordia ages (respectively, 497.3±3.5 Ma and 496.9±4.3 Ma; 1σ errors; no significant traces of inheritance detected) confirm our suspicions, and extend further south the known exposition of the Ribeira G5 magmatism.
Both the Santos and Guarujá plutons are dominated by fractionated granites (>70 wt% SiO_2) with high-K "I-type" signature; coeval diorite bodies showing mingling structures occur in Guarujá, and have a high-K (+Ba, Sr) signature that is typical of the G5 magmatism (e.g., Wiedemann et al., 2002, *Gondwana Research*, **5**: 381-399). This magmatism reflects a post-collisional thermal impulse that resulted in melting of enriched-mantle and lower crust sources, and is apparently related to collapse after the Búzios Orogeny, the youngest convergent event recorded in the Ribeira Belt.

PALAVRAS CHAVE: Granito, Ribeira Fold Belt, Shrimp U-Pb dating