

# LOMAS MANECHIS GRANULITES INTRUSIVE SUITE ON BRAZIL-BOLIVIA BORDER. A LOWER CRUSTAL ROCKS OF PARAGUA TERRANE: PETROGRAPHIC, GEOCHEMICAL AND U/Pb (SHRIMP) GEOCRONOLOGIC CONSTRAINTS

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The Lomas Manechis Intrusive Suite occurs on the border of Brazil and Bolívia and are composed of granitic type rocks with porphyroclastic textural/structural patterns. The porphyroclast k-feldspars can have dimensions up to 5 cm on the major axis and matrix of medium to coarse grains, greenish colour containing mineral like plagioclase, quartz, biotite, hornblende and hypersthene. Hypersthene is the main mafic mineral and has anhedral grains with dimensions ranging from 0.1 to 1.6 mm, locally forming mineral aggregates or interfingering with biotite. These minerals presents retrograde reactions to chlorite and sericitic products. Minerals such as garnet, sillimanite or cordierite which are indicatives of sedimentary protolith were not observed. Geochemical data show saturated rocks on SiO<sub>2</sub> (66.3 to 72.8%) demonstrating an evolved magmatism, with calk-alkaline, sub-alkaline and metaluminous to slightly peraluminous characteristics, generated in a volcanic arc environment. The U/Pb SHRIMP results obtained at the IGc-USP laboratory on three samples from Bolivia yielded ages of  $1677 \pm 21$ ,  $1658 \pm 15$ , and  $1640 \pm 12$  Ma, which were interpreted as the crystallization age. A lower intercept age of  $1190 \pm 250$  Ma could suggest an isotopic disturbance during the Sunsas-Aguapeí Orogeny. An age of  $1708 \pm 120$  Ma may indicate the presence of inherited zircons. The Th/U zircon ratios between 0.2 and 1.0, and geochemical rock data are compatible with magmatic origin for these rocks.