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PETROLOGY AND LITOGEOCHEMISTRY OF THE CORREAS TIN-BEARING GRANITE, SOUTH OF SÃO PAULO STATE, BRAZIL

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PETROLOGY AND LITHOGEOCHEMISTRY OF THE CORREAS TIN-BEARING GRANITE, SOUTH OF SÃO PAULO STATE, BRAZIL¹GORAIEB, C.L., ²BETTENCOURT, J.S. ¹Institute for Technological Research of São Paulo State, Brazil (IPT); ²University of São Paulo - Brazil (USP)The Correás massif is a 5km² stock with NE-SW trend intruded into gneiss and Paleo to Mezoproterozoic medium-grade supracrustal metamorphic rocks of the Ribeira Fold Belt. The lack of deformational features and age (Rb/Sr whole rock isochron = 603 ± 7 Ma) indicate a postorogenic emplacement. The stock shows a magmatic evolution from biotite granite to fine-grained porphyritic topaz-bearing muscovite albite granite. Monzogranite and syenogranite with subalkalic and metaluminous composition are the dominant varieties within earliest facies, grading to slightly peralkaline and peraluminous alkali-feldspar latest phase. The differentiation trend towards the topaz-bearing muscovite albite granite is marked by the depletion of some major oxides and trace elements, caused by fractionation of plagioclase (CaO, Sr and Eu), K-feldspar (K₂O, Ba and Sr), biotite and other Fe-Mg silicates (TiO₂, FeO, MgO, CaO and Ba), quartz and accessory phases such as fluorite, zircon, apatite and allanite (REE). The residual melt became enriched in Na₂O, Al₂O₃, F, Li, Rb and Nb, from which the albite-granite crystallized. The immobile elements (Zr and Ti) show common evolutionary trend as the correlation lines have common starting point and slope, which suggest that they are directly related to fractionation from the same parent magma. Cassiterite, wolframite and sulphide-bearing greisen bodies with associated quartz veins are spatially and genetic related with the albite granite.

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