



**Sr, Nd AND Pb ISOTOPE EVIDENCE FOR MANTLE SOURCE
HETEROGENEITIES IN THE PONTE NOVA ALKALINE
MAFIC-ULTRAMAFIC MASSIF, SOUTHEASTERN BRAZIL**

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ABSTRACT

Sr, Nd and Pb isotope data for the Ponte Nova massif -a Cretaceous alkaline intrusive centre lying in the northern sector of the Serra do Mar Province in southern Brazil- are discussed within an isotope regional context, focusing the evolution of the massif and mantle enrichment constrains. The wide range of initial ratios is not related to crustal contamination processes but points to an enriched mantle source with local heterogeneities, as indicated by the multi-intrusive character of the massif. The EM1-HIMU lithospheric signature of the Ponte Nova massif is consistent with other occurrences and provinces of southern Brazil. Depleted mantle Nd model ages (T_{DM}) of nearly 950 Ma suggest a mantle source metasomatically enriched during the Neoproterozoic events recorded in country rocks. These evidences could favor geodynamic models mainly associated with lithospheric processes.