CHARACTERIZATION OF POSMAGMATIC ALTERATION ON ALKALINE ROCKS OF LAGES – SC – BRAZIL.

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The Alkaline District of Lages is formed by the association of sub volcanic rocks, dominated by feldspatic alkaline group (mainly phonolites) with a minor participation of primitive rocks with high concentration of MgO. New methodology employed to the study of phonolites outcropping in this region results in the identification of a wide process of posmagmatic alteration. The intensity and outlook of this alteration is not uniform and can be restricted to vein (vein type) or can affect the whole rock (zone type or pervasive). The knowledge of this posmagmatic transformation results in an important tool applied to explain the distribution of mineralization in the district. The mineralogy associated with this late event mainly has a leucocratic composition where it is common to identify sodalite, nosean, analcime, natrolite, phosphates and rare grains of sphalerite, pyrite and fluorite. The zone type alteration initially replaces phonolite primary felsic minerals (nepheline and leucite) by secondary phases as sodalite/nosean group, followed later by cancrinite and zeolites (analcime and natrolite). The vein type alteration is characterized by transformation of nepheline to zeolites. These results associated with information about CaO/Al2O3 and Zr/Nb ratios, the high activity of S and Cl and radiometric dating, discard the idea of a sodium alkaline suite in Lages and support a chronology of emplacement of these phonolites.