

THE SOUTH PATAGONIAN BATHOLITH BETWEEN 48° AND 51° S.L. : A CASE OF LARGE SCALE COGENETIC EVOLUTION

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The Patagonian Batholith is a 1200 km (44° to 56° s.l.) long, 60 to 150 km wide complex that crops out along the Chilean southwestern margin whose 165 to 11 Ma age range coincides with a high rate of oceanic crust generation. Rock types vary from gabbros to biotite-hornblende monzogranites, including diorites, quartz diorites and tonalites, all medium to coarse grained. Seventy samples analyzed from three transects in the southern part of the batholith show a wide range in composition, with SiO₂ values from 41 to 74.7 %. Only 10% of them, the most basic, have a tholeiitic trend while the rest are all calcalkaline, within the subalkalic series. Sc, V, Co, Cr, Ni, Cu and Zr show a negative correlation with silica, while Sr and Ba fail to correlate. Ba is however higher in the acidic rocks while Cr, Ni and Cu are higher in the more mafic ones. (La/Yb)_n ratios are usually less than 10, though in some tonalites may reach up to 40. From this petrographic and geochemical data we conclude that this huge batholith evolved cogenetically.