



MAGM-1: Arcos magmáticos fanerozoicos

The North Patagonian (arc) and the Munro (rift) Batholiths: Time-space geochemical variations caused by the subduction of the Farallon-Aluk active ridge

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In the last decades, the Andes are considered a paradigm of Mesozoic-Cenozoic subduction-related orogenesis in southwestern South America. This assumption is held by the widespread magmatic episodes related to subduction of Pacific oceanic plates and the break-up of southwestern Gondwana, suggesting that the Andes tectono-magmatic history is built as the result of a continuum of consecutive subduction symmetries. Thus, little emphasis has been given to the collision of active ridges (triple junctions) and the probability that these collisions may develop subduction gaps. Patagonia, in the period Upper Cretaceous-Paleocene was subject to the collision of the Farallon-Aluk active ridge (Cande & Lesli, 1986), characterized by the strike-slip coupling of Farallon-SAM plates (proto-Liquiñe-Ofqui fault zone) and the detachment of Aluk (Phenix) plate (Aragón *et al.*, 2011). This scenario was dramatically changed in the Neogene as the Nazca plate reorganization caused the widely recognized Neogene subduction and contractional stage that built-up the present Andes. Thus this region of Patagonian Andes provides one of the most suitable scenarios to study the tectono-magmatic changes from subduction, to active ridge collision and slab window, which took place from the Late Jurassic to the Present. A detailed E-W profile (400 kilometers length), sampling all magmatic units (Jurassic to Miocene) from the fore-arc to the foreland are analyzed for major, trace and SHRIMP ages. The accurate data of age and distance to the trench allows correlating the magmatic units to the geologic events prior, during and after the Farallon-Aluk ridge collision. The LILE elements show a behavior that is constrained by the distance to the trench, independent of the age of magmatism. But the slope of the LILE/trench distance trend is sensitive to the compressive or extensional tectonic setting. Aragón, E., D' Eramo, F., Castro, A., Pinotti, L., Brunelli, D., Rabbia, O., Rivalenti, G., Varela, R., Spakman, W., Demartis, M., Cavarozzi, C.E., Aguilera, Y.E., Mazzucchelli, M. and Ribot, A., 2011. Tectono-magmatic response to major convergence changes in the North Patagonian suprasubduction system; the Paleogene subduction-transcurrent plate margin transition. *Tectonophysics*, 509(3-4): 218-237. Cande, S.C., Leslie, R.B., 1986. Late Cenozoic tectonics of the southern Chile trench. *Journal of Geophysical Research* 91 (B1), 471-496.