

# Middle Miocene calc-alkaline volcanism in Central Patagonia (47°S): Petrogenesis and implications for slab dynamics Volcanismo calcoalcalino durante el Mioceno Medio en Patagonia Central (47°S): Petrogénesis e implicaciones en la dinámica de placas

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We present a chronological (K-Ar), petrologic and geochemical study (major and trace elements, Sr-Nd isotopes) of Middle Miocene (ca. 16-14 Ma) calc-alkaline rocks (basalts to andesites) extruded in the present-day back-arc region of Central Patagonia (Zeballos Volcanic Sequence (ZVS), 47°S). This magmatism started shortly after mafic plutonism ceased in the arc region (ca. 16 Ma, 200 km west), and ended ca. 2 My before the onset of voluminous slab tear-related back-arc alkaline basaltic magmatism (ca. 12 to Pliocene). The studied calc-alkaline rocks have a typical subduction-related signature (high LILE/HFSE ratios, depletion in Nb, Ta and Ti; Ba/La >20; Ta/Hf <1.5;  $(^{87}\text{Sr}/^{86}\text{Sr})_0=0.70366-0.70402$ ,  $\epsilon_{\text{Nd}}=+0.1-+3.8$ ). Major and trace elements contents are consistent with their evolution by closed system fractional crystallization of a presumed parental liquid similar in composition to the most basic rock of the suite. Moreover, a strong subducted sediment imprint is recognized (increasing