

## **CONTRASTING GEOCHEMICAL FEATURES AND TECTONIC EVOLUTION OF THE LOWER CRETACEOUS VOLCANIC ARC, COASTAL RANGE, ATACAMA REGION, CHILE (27°-30°S.).**

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Large volumes of volcanic rocks ranging from basic to acid composition, characterize the early cretaceous volcanism in the coastal range of northern Chile between Copiapó and La Serena. They are composed by more than 3 km thick sequence, intruded by plutonic rocks of similar composition, considered the roots of an ensialic volcanic arc. The volcanic products were deposited in intra-arc basins subsiding at high rates ( $\sim 180$  m/m.y.). The geochemical signature of the basal lava flows demonstrates some alkaline affinity of anomalous volcanic arcs setting with a transitional pattern between plate and calcalkaline basalts, that contrasts with the calcoalkaline trend shown by the rest of the volcanic sequence. The oblique and high rate convergence of the ALUK plate during this time, resulted in the reactivation of the Atacama Fault System and the formation of dilatational jogs related mechanism controlling the emplacement of the magmatic arc along a thermally attenuated continental crust, favoring an initial rifting stage with alkaline affinities.