

# **Competition between magma flow and subduction related stresses in a doleritic dyke complex located close to the subduction of the Chile Ridge (Patagonia). An AMS and structural study.**

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A doleritic dyke complex of Miocene age, cutting across Magdalena Island, has been studied using AMS and structural techniques. Because many dykes are trending in a N30° direction, their opening cannot be directly associated with the N75° oriented subduction. However, if we consider at the same time : 1/ the N30° Chonos faults ; 2/ the evidences of dextral transtension in the dykes ; 3/ the existence of the dextral N10° Liquine-Ofqui and Moraleda shear zones and 4/ the azimuth of the Pacific subduction, we can conclude that the Chile Ridge behave like an oblique indenter which collided against a crustal segment unconfined to the West.

The results of the AMS study show steeply and shallow dipping inclinations of the main (Kmax) or intermediate (Kint) components of the anisotropy tensor. The vertical Kmax plunges are often associated with the magma flow. However, in some places, the magma flow is associated with a vertical Kint. and the shallow Kmax. is parallel with the shortening direction which was responsible for the opening of the dykes. This result suggests that the N30° shallow Kmax can be interpreted as markers of the subduction stress and that there has been a competition between the stresses generated by the indenter and the magma flow.