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**TECTONIC EVOLUTION OF FILDES
PENINSULA, SOUTH SHETLAND ISLANDS,
ANTARCTIC**

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The volcanic arc sequence in the Fildes Peninsula was formed during Early Tertiary. The islands arc sequence correspond to ca. 28, 88m² long, represented by a stratified succession of basic lava flows, and interbedded pyroclastic and vulcanoclastic rocks. These units are intruded by basaltic to basalt-andesite dykes which evolved from the same sources.

Major minerals components are plagioclase, as phenocryst An₇₂₋₉₂, and as matrix An₄₀₋₆₈, augite and titanomagnetite, as well as. Occasionally, pigeonite occurs in the matrix.

These rocks shows light REE enrichment two times the chondrite pattern. In the spidergram (normalized to chondrite) the High Strength Field Elements such as Ti, Nb and Hf, show strong negative anomalies, whereas Zr, Ba and Sr positive anomalies. Sm-Nd ($\epsilon_{Nd} = + 7.62$) and Rb-Sr ($^{87}Sr/^{86}Sr = 0.703$) isotope results show signature of volcanic arc association.

From the structural point of view, there are extensional and strike-slip faulting formed in ruptile conditions, which are oriented at WNW-ESW, N-S, N60E-S60W. We distinguished at least two main tectonic events, the first associated with subduction and generation of imature island arc; the second one is related to the generation of the upper Tertiary Bransfield Strait.

On base of petrography, structural, geology, geochemistry and isotopes, we characterize these rocks as high-Al tholeiites and subordinate calc-alkaline basalts, derived from parcial melting of mantle wedge (depleted mantle).