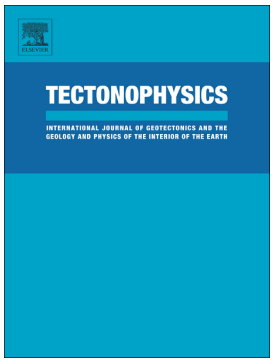

Evolution of a volcanic island on the shoulder of an oceanic rift and geodynamic implications: S. Jorge Island on the Terceira Rift, Azores Triple Junction

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Evolution of a volcanic island on the shoulder of an oceanic rift and geodynamic implications: S. Jorge Island on the Terceira Rift, Azores Triple Junction

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Abstract

The S. Jorge Island in the Azores lies on a peculiar setting, the southern shoulder of the Terceira Rift (TR), which raises a series of questions that we address in this study. We first established the main volcanic stratigraphy by recognizing, in the field, the main unconformities/discontinuities and their meaning (major erosion surfaces and faults), then we collected critical samples, and finally dated them by K/Ar to calibrate the stratigraphy and the age of inferred large-scale flank collapses. Based on field, geochronological and marine geophysical data: (1) we found much older rocks in S. Jorge than in previous studies (ca. 1.85 Ma), and established a new volcanic stratigraphy (from bottom to top): Old Volcanic Complex (ca. 1.9 – 1.2 Ma), cropping out in the eastern third of the island; Intermediate Volcanic Complex (ca. 0.8 – 0.2 Ma), cropping out in the western two thirds of the island and separated