

Geodynamic constraints of Canarian volcanism

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The intimate relationship between tectonism and magmatism is evident in all volcanic environments, where magma production, magma ascent rate, loci of volcanic activity, and the style of volcanic activity, are directly dependent on the regional/local tectonic characteristics of the area. A good understanding of the geodynamic controls of volcanism is crucial to characterise its associated hazards and to forecast future volcanic eruptions. Unfortunately, very few active volcanic areas are well constrained in terms of their geodynamics, which are basically investigated at a regional scale in order to understand the origin of the related magmatism, but not at a more local scale trying to characterise the structural controls on magma evolution and eruption. In this contribution we investigate the geodynamic framework of Canarian volcanism, applying numerical modelling to determine the current distribution of regional and local stresses. On the light of the results obtained we discuss the structural controls of the Canarian volcanism, and propose a conceptual model that explains the interplay between volcanism and geodynamics as an effective way to forecast future volcanic activity in this area.