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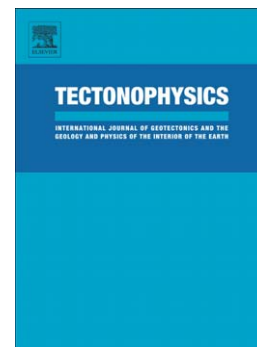
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**Thick-skinned tectonics closing the Rifian corridor**

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**Abstract**

Tectonic processes in the Gibraltar region are associated with Africa-Iberia convergence and the formation of the Betic-Rif orogenic system. The Late Miocene shortening recorded in the Rif Orogen resulted in gradual shallowing and eventual closure of the Rifian Corridor, a narrow marine gateway connecting the Atlantic Ocean with the Mediterranean Sea. This closure is associated with paleoenvironmental changes that ultimately led to the Mediterranean Messinian Salinity Crisis. Here we present a structural analysis based on a combination of field kinematic data and interpretation of reflection seismic lines acquired for petroleum exploration to understand the deformational phases associated with the closure of the Rifian Corridor. We show the succession of three Late Miocene to present day events, an initial thin-skinned nappe thrusting, followed by regional subsidence and continued by thick-skinned contraction. The transition from in sequence thin-skinned tectonics during subduction to thick-skinned contraction during continental collision resulted in significant acceleration of tectonic uplift and associated exhumation. This is related to a change in the regional deformation linked to plate convergence, but possibly also coupled with deep lithospheric or dynamic topography processes. Such a mechanism is also common for other Mediterranean orogens during late stages of slab retreat, where accelerated tectonics resulted in rapid sedimentation and associated basins evolution. We conclude that the thick-skinned contraction in the Rif orogeny

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