



Block tectonics puzzle of Iberia and the Early Cenozoic geodynamics of the W-Tethyan realm

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Recent and ongoing attempts at reconstructing past plate movement of Iberia increasingly show its architecture is highly heterogeneous due to compartmentalization inherited from multiple Mesozoic rifting events. Moreover, the continuity of Iberia-related continental units in the Alpine system remains elusive as a result of the Neogene opening of the Mediterranean Sea. Despite this complexity and the strong overprint that removed most of the tectonic and stratigraphic record of the former W-Tethyan margin evolution of Iberia, we exploit existing geophysical data obtained across orogenic segments and rifted margins, as well as new geochronological data to refine the plate tectonics puzzle during the Early Cenozoic when convergence started. We further use inferences from numerical modeling of inverted rifted margins to place limit on the quantitative estimates of crustal shortening onboard Iberia and on its margins.