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## Investigating the plate kinematics of continental blocks and their role on the deformation experienced along the Iberia-Eurasia plate boundary using deformable plate tectonic models

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The kinematics of the Iberian plate during Mesozoic extension and subsequent Alpine compression and their implications on the partitioning of strain experienced across the Iberia-Europe plate boundary continue to be a subject of scientific interest, and debate. To date, the majority of plate tectonic models only consider the motion of rigid tectonic plates. In addition, the lack of consideration for the kinematics of intra-continental domains and intervening continental blocks in-between has led to numerous discrepancies between rigid plate kinematic models of Iberia, based mainly on tight-fit reconstruction of M-series magnetic anomalies, and their ability to reconcile geological and geophysical observations. To address these discrepancies, deformable plate tectonic models constrained by previous plate reconstructions, geological, and geophysical studies are built using the GPlates software to study the evolution of deformation experienced along the Iberia-Eurasia plate boundary from the Triassic to present day. These deformable plate models consider the kinematics of small intra-continental blocks such as the Landes High and Ebro Block situated between large tectonic plates, their interplay with pre-existing structural trends, and the collective impact of these phenomena on the deformation experienced during Mesozoic rifting and Alpine compressional re-activation along the Iberia-European plate boundary. Preliminary results suggest that the independent kinematics of the Landes High played a key role on the distribution of oblique extension between different rift arms and resultant deformation within the Bay of Biscay. Within the Pyrenean realm, deformation experienced prior to and during the Alpine Orogeny was more largely controlled by the interplay between the Ebro Block kinematics and rift segmentation induced by the orientation of inherited trends.