# Along-strike variability of the influence of inherited structures in the Plio-Pleistocene Corinth Rift southern margin architecture

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**Résumé**

The Corinth Rift in Greece is located at the north-western termination of the Aegean high-pressure phyllite-quartzite exhumation zone formed during the Southern Hellenides subduction during the Oligocene and early Miocene. N-S extension of the active Corinth Rift on high-angle normal faults initiated around 4 Ma. Although low-angle extensional structures have previously been recognized along the Corinth Rift southern margin, their age, significance, and relation to the N-S rifting are controversial. Specifically, little is known about the 3D relationships between these low-angle extensional structures, the phyllite-quartzite domes, and the initiation of the Corinth Rift. The aim of this study is to characterize the 3D relationships between the Corinth Rift and inherited structures of the Southern Hellenides belt, especially the PQ dome, syn-orogenic detachment and low-angle normal faults.
High-angle normal faults of the Corinth rift mainly crosscut LANFs, detachments and the metamorphic dome. A single and unique detachment plane for the entire Corinth rift does not explain the observed structural relationships between the LANFs, detachments and Corinth rift normal faults, especially in the eastern Corinth Rift. Although the main relationship between Corinth rift normal faults and the pre-existing LANFs, detachments and metamorphic dome is a cross-cutting one, there is a varied structural inheritance influence on the Corinth rift. Interestingly, the Drosopigi-Stymfalia depocenter east of Mount Ziria in the eastern Corinth Rift was controlled first by low angle normal faults and then by high angle normal faults.
At the rift scale, the Corinth rift developed at the northern plunging termination of the metamorphic dome suggesting it may have partially controlled the location of the rift. Rift normal fault spacing north of the HP dome suggest potential reactivation of the northern periclinal termination of the HP dome. Rift normal fault spacing increases to the E of the dome and the rift widens by ca. 20 km. Furthermore, local non-colinear fault geometries occur along the southeastern margin of the rift where E-W-striking Corinth rift normal fault crosscut the NW-SE-trending Argos basin suggesting potential reactivation of NW-SE-striking Argos basin faults.

**Mots-Clés:** Corinth Rift, Structural inheritance, Low, angle normal faults, Peloponnese

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