



## **Modeling the Structural Evolution of Extensional Tectonics in the Aegean Region**

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The Aegean region has been deformed by the N-S oriented lithospheric scale extensional tectonics approximately since 35 Ma, following the Alpine plate collision. Such extension led to the exhumation Menderes massif in western Turkey and the Cyclades in the Aegean Sea in conjunction with the development of normal faulting in various scales (e.g. low angle detachments and high angle faults). Geological and thermo-chronological studies are used to account for varying pressure and temperature conditions, however the cause of the extensional tectonics (symmetric vs asymmetric development of normal faulting) and the related exhumation process has been attributed to several mechanisms. Here, we test the associated P-T-t and the normal faulting style in the post orogenic evolution of the lithosphere by using forward numerical modelling technique. Rheological characteristics of the mantle lithosphere and the size, length and the style of ocean subduction prior to the collision have been varied to investigate the development of extensional tectonics. Our model results are reconciled with the available P-T paths and the structural characteristics of the faults in the Aegean region.