



## **Late, brittle faulting in the Cyclades: a combination of strike slip and high angle normal faulting since the Mid Miocene.**

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Back-arc extension in the Greek Cyclades has been widely studied and its extensional style seems to have evolved through time. The earliest stages started with high-pressure, low-temperature rock exhumation, and metamorphic core complex exhumation in the Late Oligocene – Early Miocene. It has since progressed to low angle normal faulting, and through to high angle normal faulting estimated since the Late Miocene. Recent studies suggest that the latest brittle stage is more complex, as strike slip faulting may have been active in the Cyclades since the Mid-Late Miocene. This study aims to constrain the relationship between strike slip and normal faulting in the Cyclades. We use structural data collected on Syros (Cyclades), as well as offshore seismic lines provided by the Hellenic Centre for Marine Research. Our interpretation of these data suggests that the Cyclades are affected by distributed, high angle faults, which create tilted blocks and sedimentary basins since the Late Miocene. This extensional deformation is found to be coeval with N50 strike slip faulting since the Mid Miocene. Our interpretation suggests that these faults are still presently active in the Cyclades and form part of a regional transtensional system, accommodating strike slip components from Anatolian extrusion and normal components from the retreating Hellenic subduction zone.