



## Seismotectonics of the Ionian-Akarnania Block (IAB) and Western Greece deduced from a local seismic deployment.

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From July 2016 to May 2017, we deployed a local seismic network composed of 15 short-period seismic stations to investigate the ongoing seismotectonic deformation of Western Greece with emphasis on the region between Ambrakikos Gulf (to the north) and Kyparissia (to the south). The network was deployed to investigate the behavior of key crustal blocks in western Greece, such as the Ionian-Akarnania Block (IAB).

After applying automatic P- and S- wave phase picking we located 1200 local earthquakes using HypoInverse and constrained five 1D velocity model by applying the error minimization technique. Events were relocated using HypoDD and 76 focal mechanisms were computed for events with magnitudes down to  $M_L$  2.3 using first motion polarities.

We combined the calculated focal mechanisms and the relocated seismicity to shed light on the IAB block boundaries. Three boundaries highlighted by previous studies were also evidenced :

-The north-west margin of the block, the Cephalonia Transform Fault, Europe's most active fault. NW-striking dextral strike-slip motion was recognized for this fault near the Gulf of Myrtos and the town of Fiskardo.

- The south-east margin is the Movri-Amaliada right-lateral Fault Zone, activated during the Movri Mt.  $M_w$  6.4 earthquake sequence.

- The Ambrakikos Gulf (a young E-W rift) and the NW-striking left-lateral Katouna-Stamna Fault zone depict the north and north-eastern margins of the IAB block.

Seismicity lineaments and focal mechanisms define the Kyllini-Cephalonia left-lateral fault, which is also highlighted by bathymetry data. We interpret this fault as the south-western margin of IAB separating an aseismic area observed between Cephalonia and Akarnania from a seismogenic zone north of Zakynthos Island and bridging NW Peloponnese with Cephalonia.