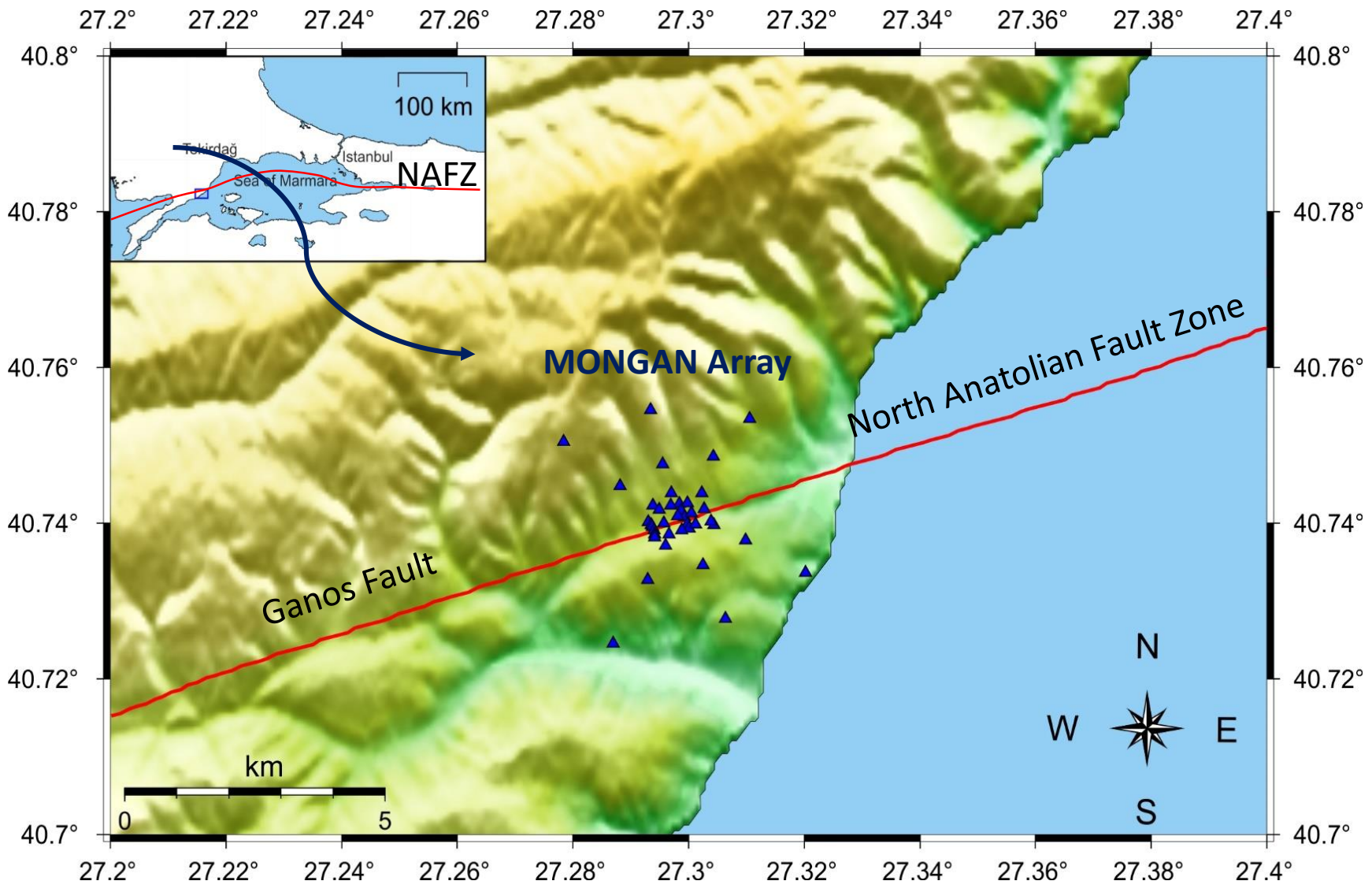


Velocity changes across the Ganos segment of the North Anatolian Fault Zone in NW Turkey from systematic variations in body wave arrival times

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MONGAN Array on Ganos Fault



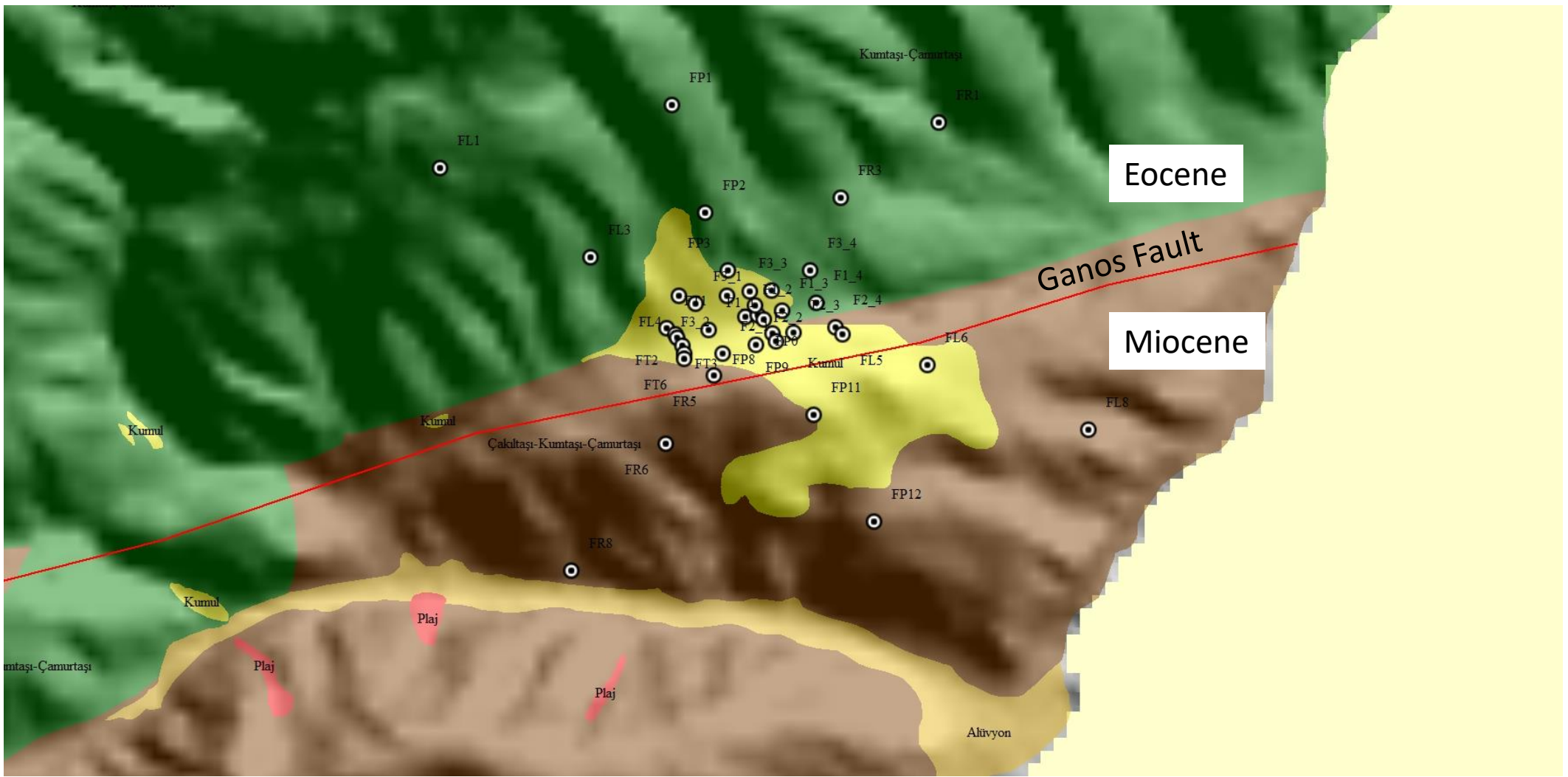
Stations

- 40 stations totally
- Deployed on September 2017
- The shortest station distance ~25m
- The largest station distance ~4km

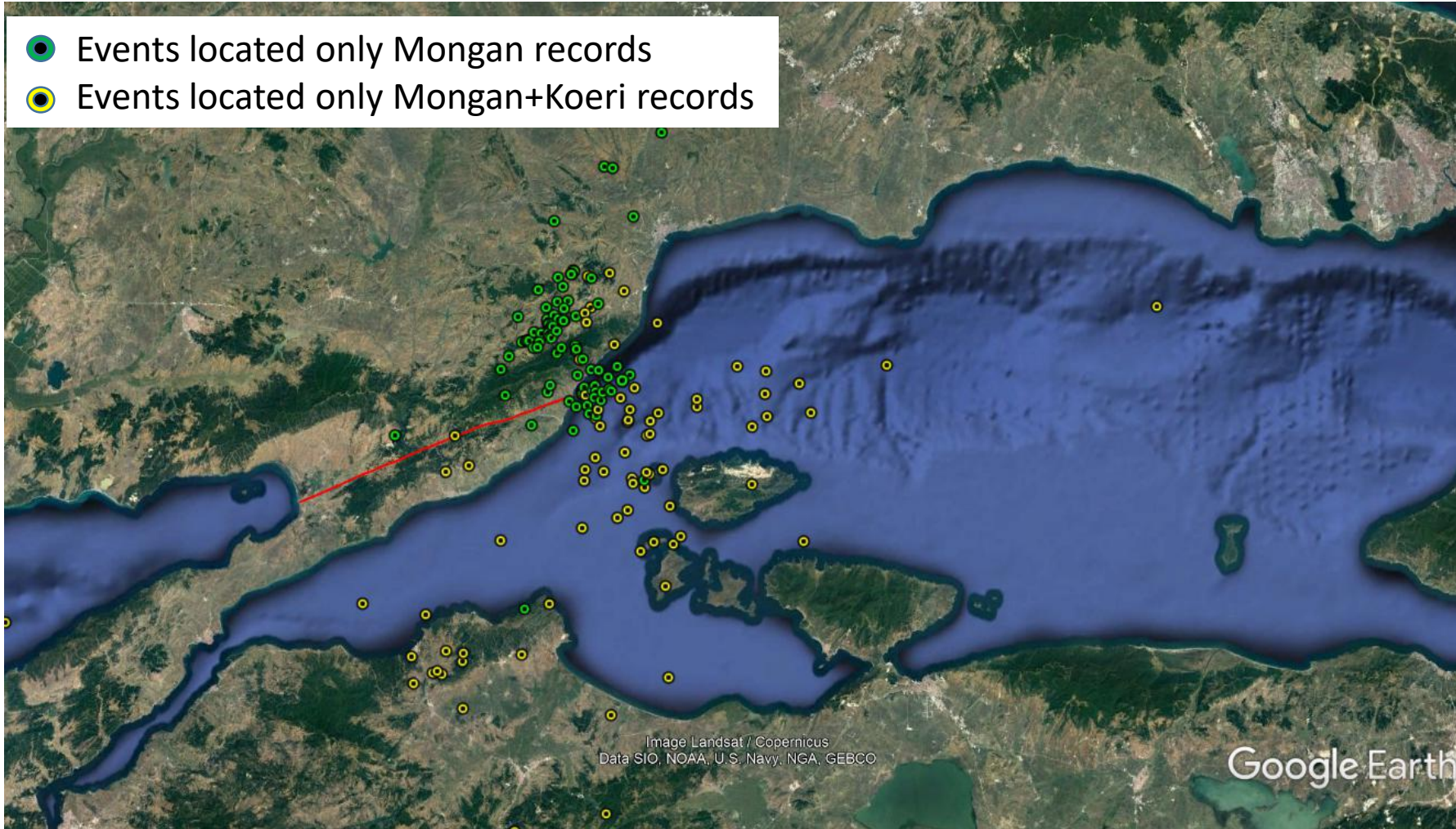
Instrument

- 10 geophones (4.5Hz) with Cube digitizer (200Hz)
- 30 Mark seismometer (1Hz) with EDL digitizer (200Hz)

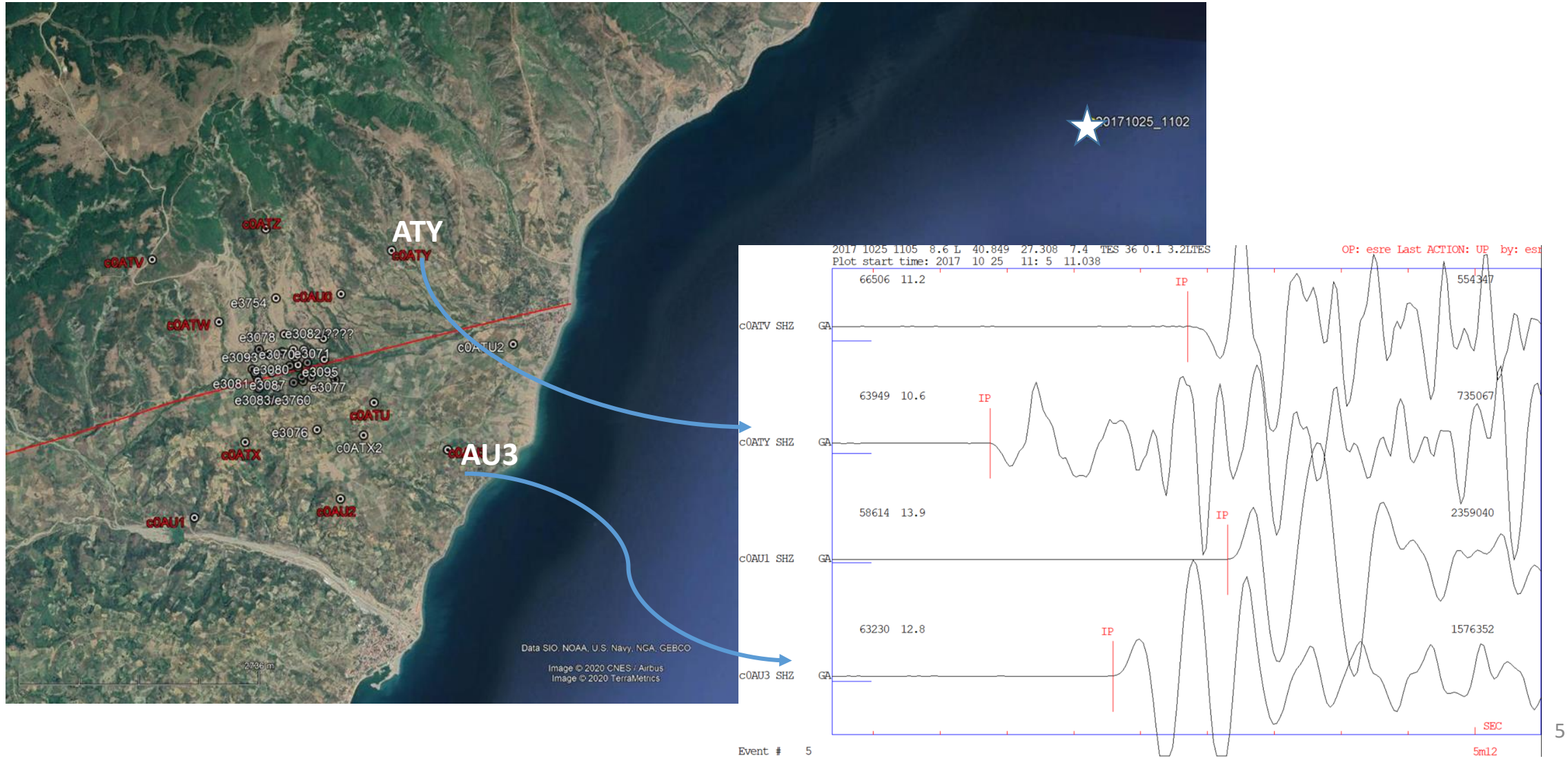
Ganos fault : bimaterial fault interface



Non-listed events in the national catalogue

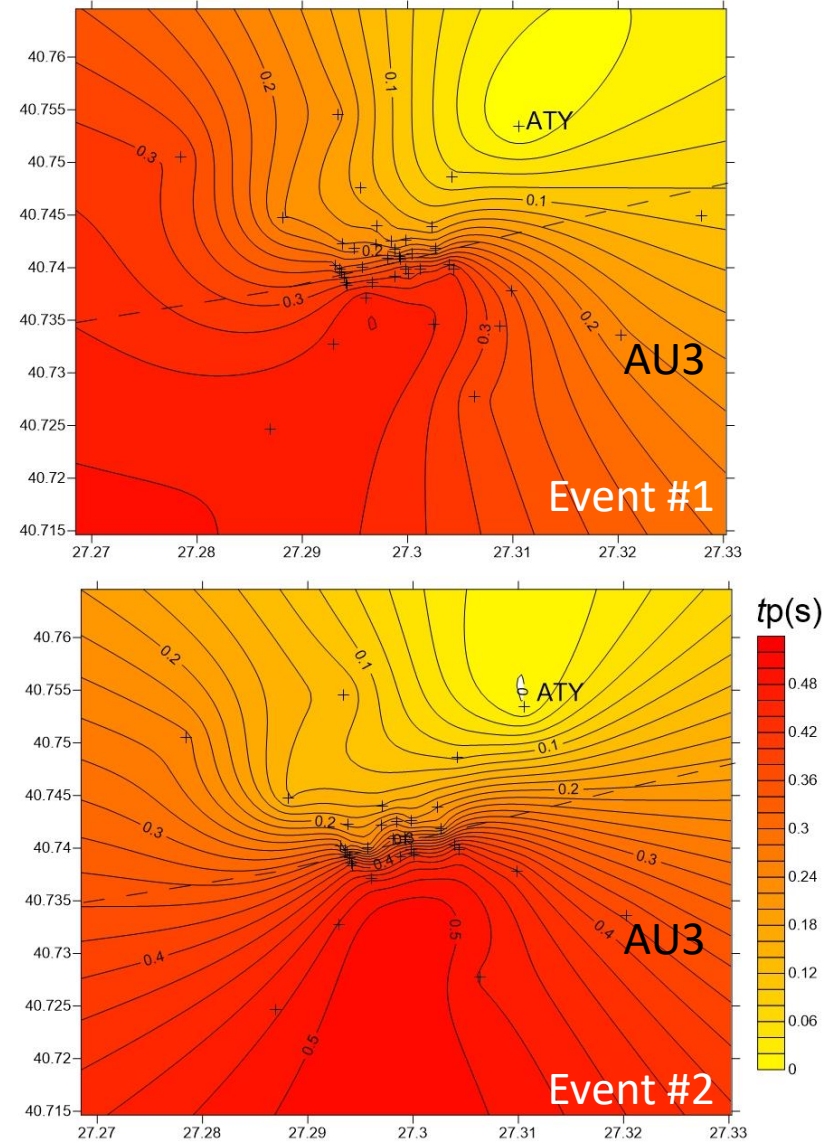


P-wave arrivals to the array stations

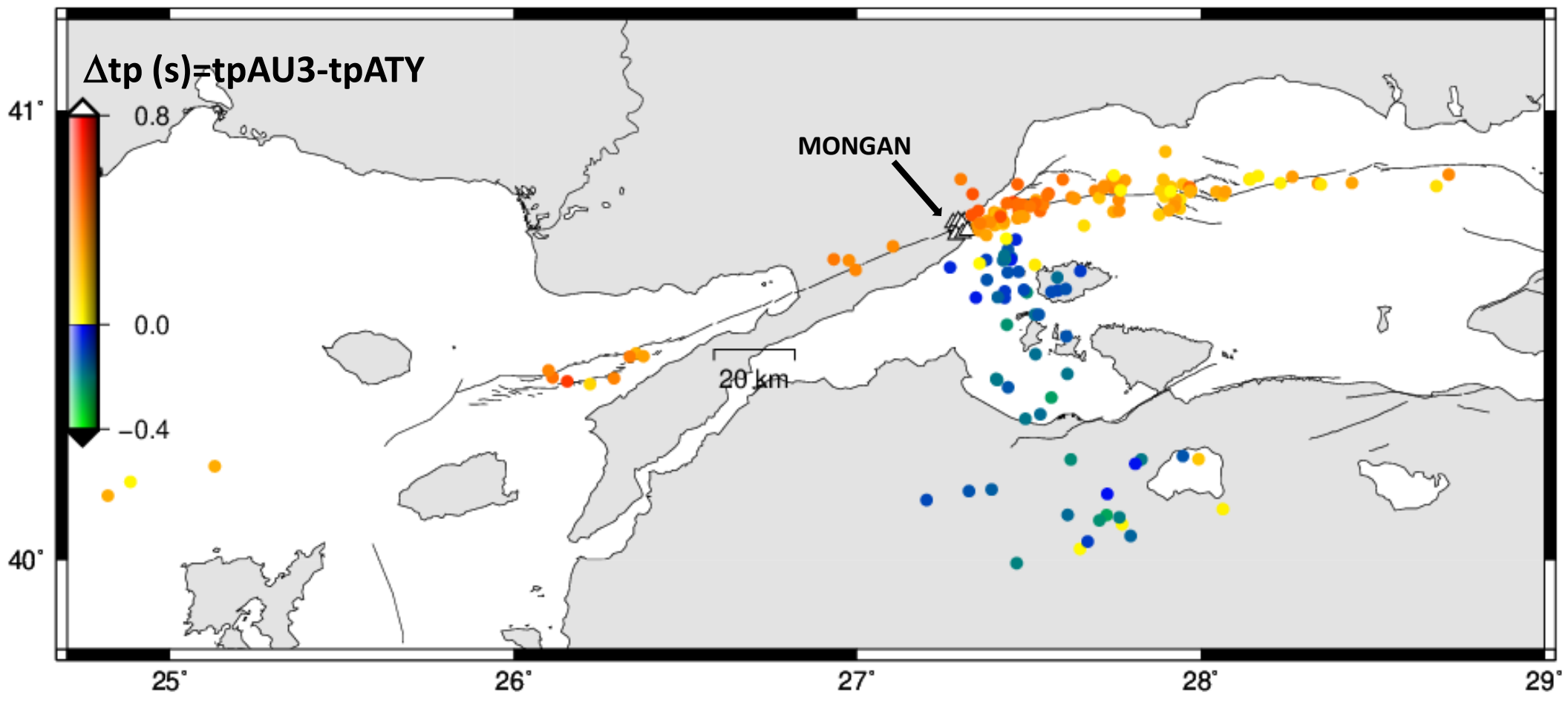


P-wave arrivals to the array stations

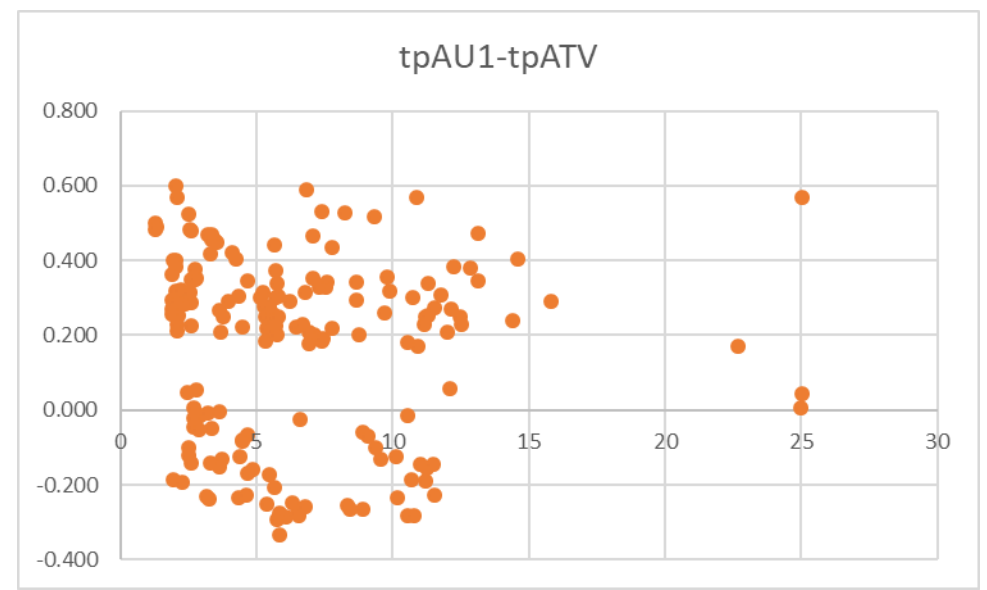
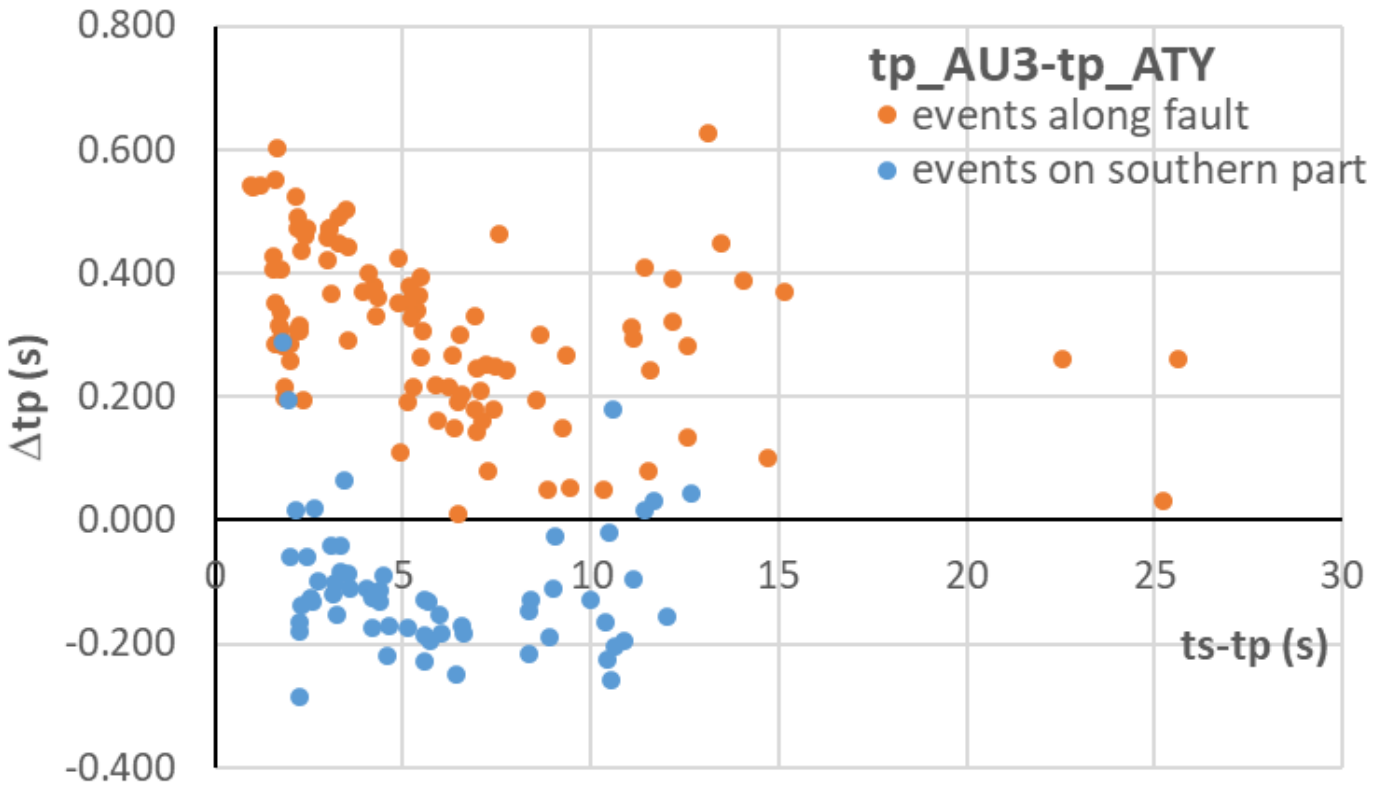
P-wave arrival times (s) at each station for two example earthquakes
(tp times normalized according to the earliest time)



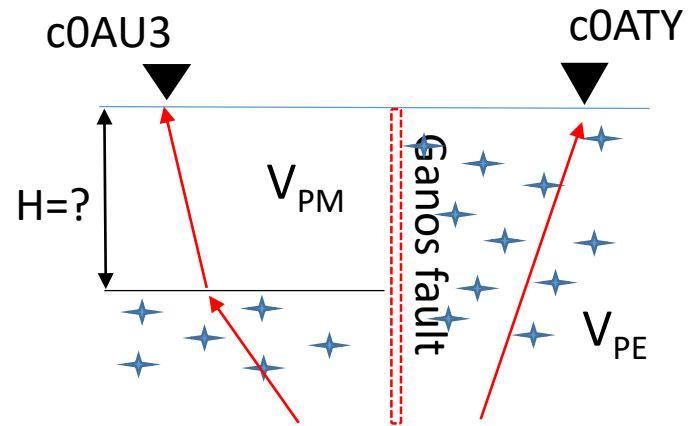
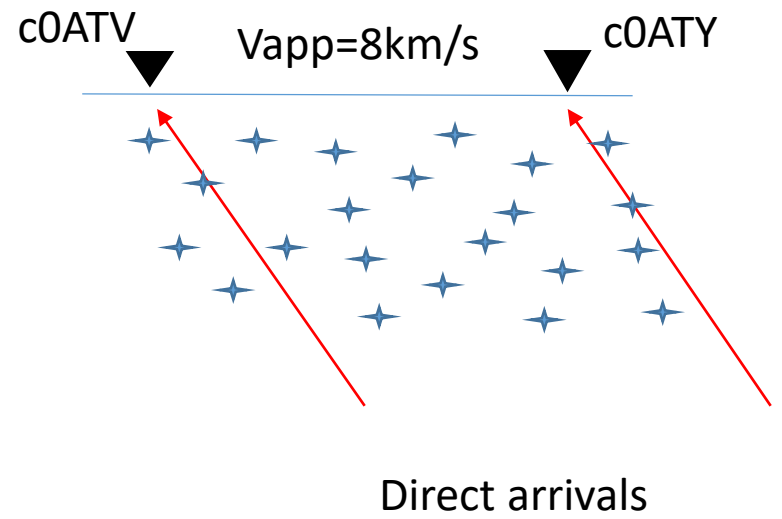
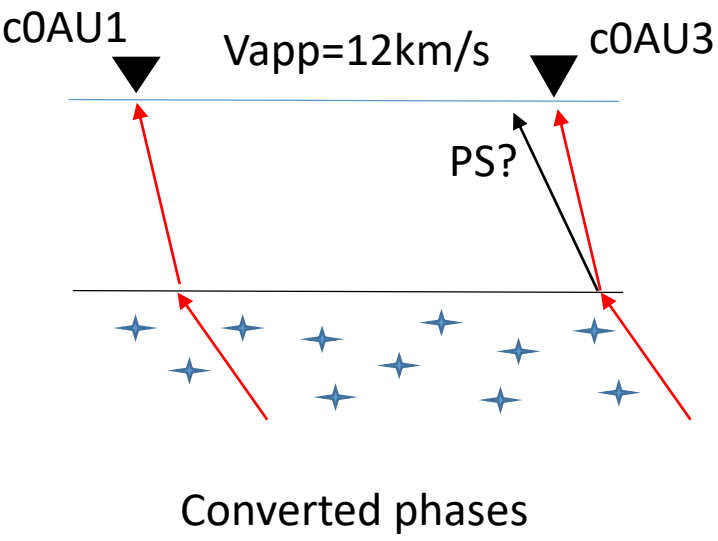
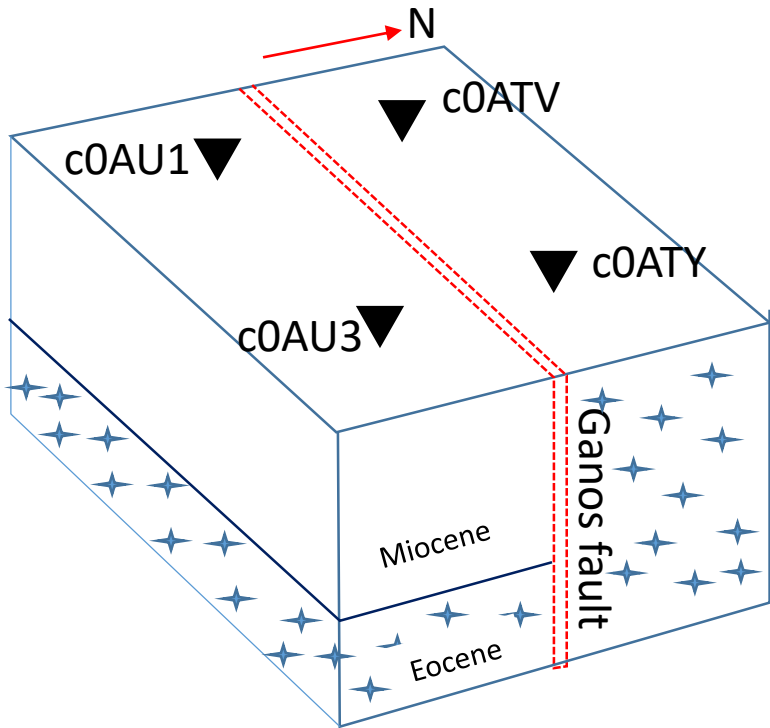
P-wave arrival time differences at AU3 and ATY stations for all events



Dependency on source distance of P-wave arrival time differences



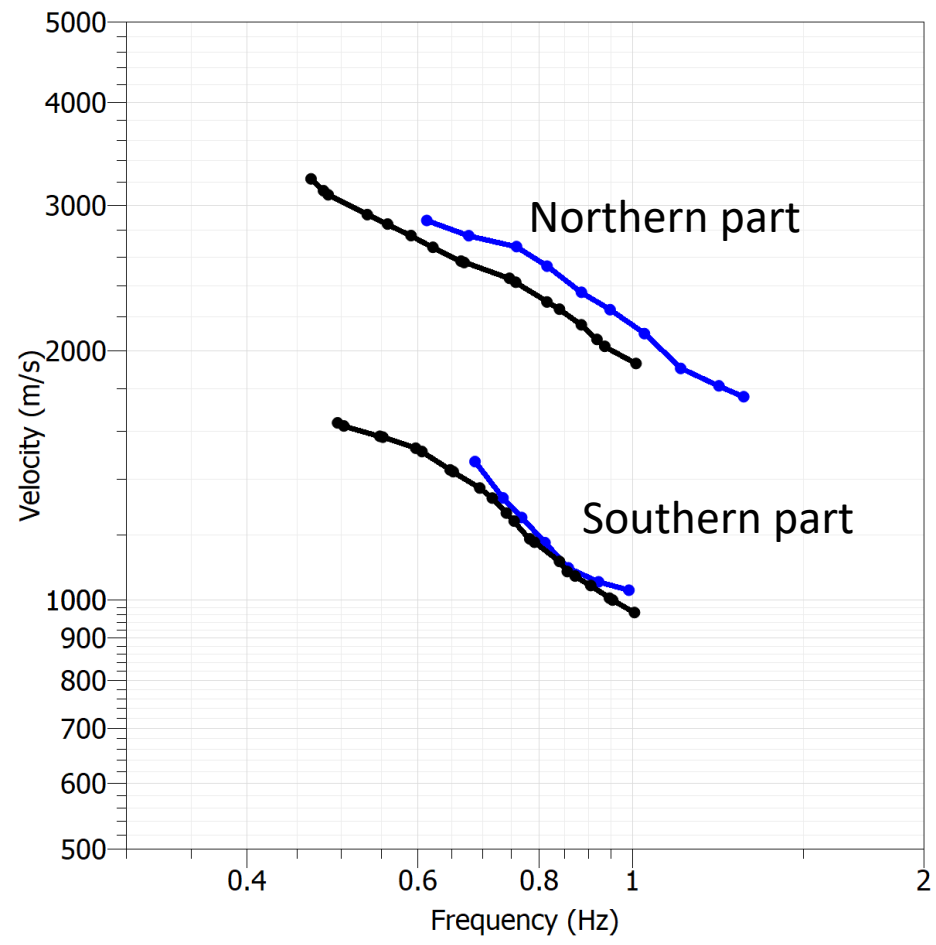
Subsurface structure



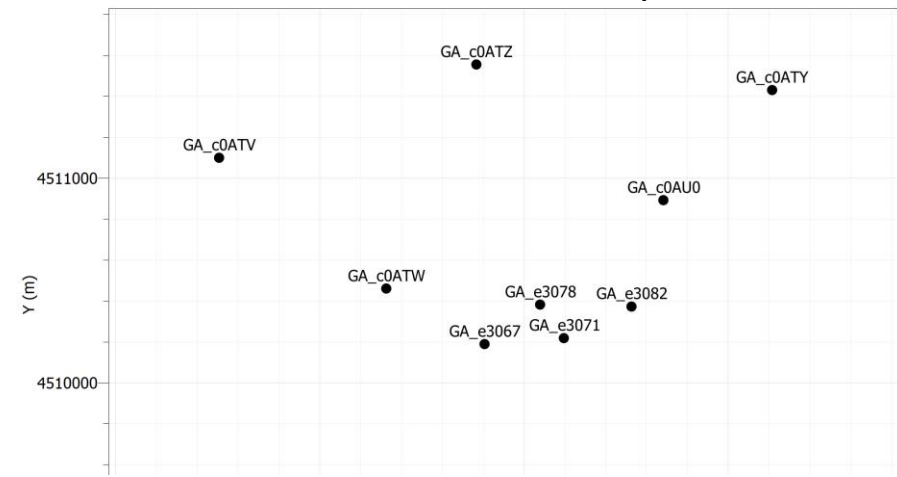
If $H=1\text{km}$ and $V_{PE}=6\text{km/s}$, $V_{PM}=2.2\text{km/s}$

MONGAN array f-k analysis

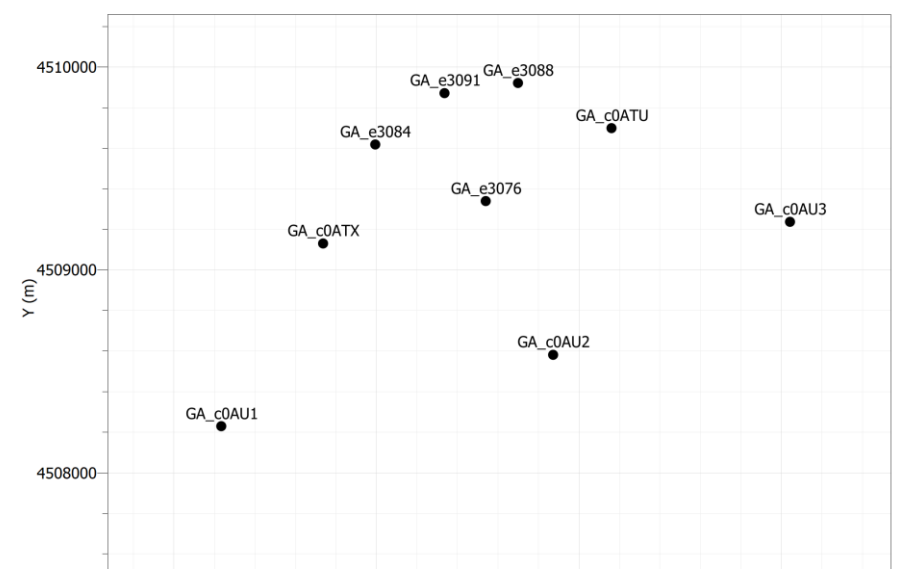
Rayleigh wave dispersion curves



Northern part stations



Southern part stations



Conclusions

- Ganos fault has a bimaterial fault interface; the northern block is older and stiffer than the southern block
- P wave arrivals on the northern block are systematically earlier than those of the southern block
- Early arrivals depend on the source azimuth and distance
- The research question is what is the velocity contrast between northern and southern block and how does this bimaterial structure's geometric model look like?

Thank you for your attention...