

Ongoing work about the 2023 Mw7.8 Turkey Earthquake

Hugo Sánchez-Reyes and Emmanuel Caballero-Leyva



ISTerre

Seminaire

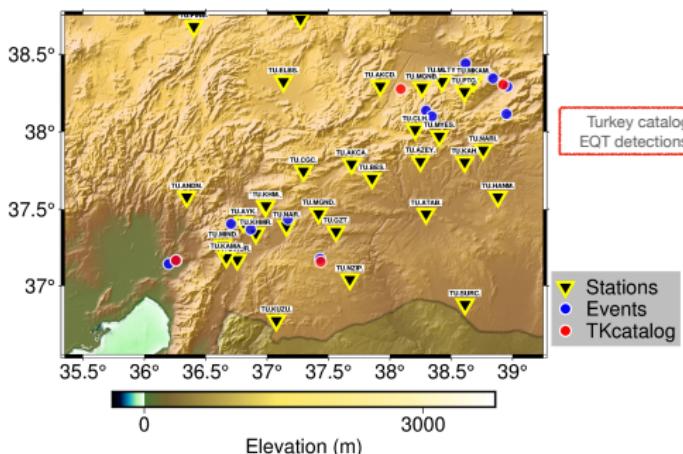
March 24, 2023

Emmanuel's work:

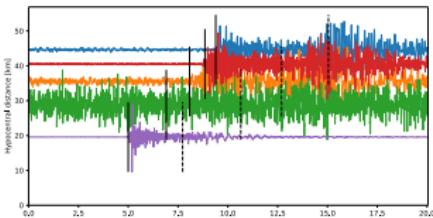
Detecting other events (foreshocks)

New detections

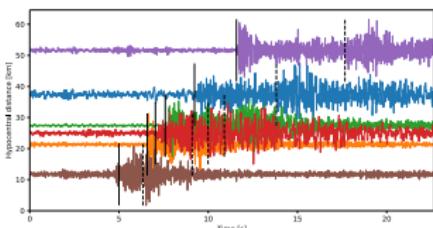
Ongoing work



Turkey catalog: 4 events
EQT detections: 13 events



03/01/2013T03:48:00
Event existing in both catalogs



03/01/2013T17:13:33
New event detected and located

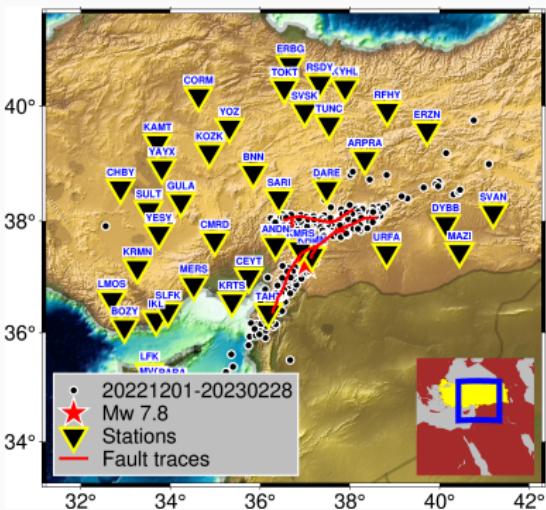
using EQTransformer from SeisBench

(Woollam et al., 2022) ... thanks Jannes!

Work by Hugo: Slip inversion? ... ongoing work

Why did it start like this?
and why there? :

- Stress field?
- Geometry?
- A mixture?



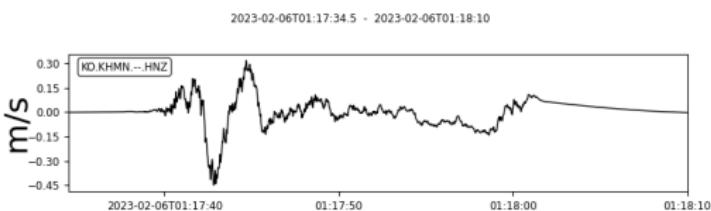
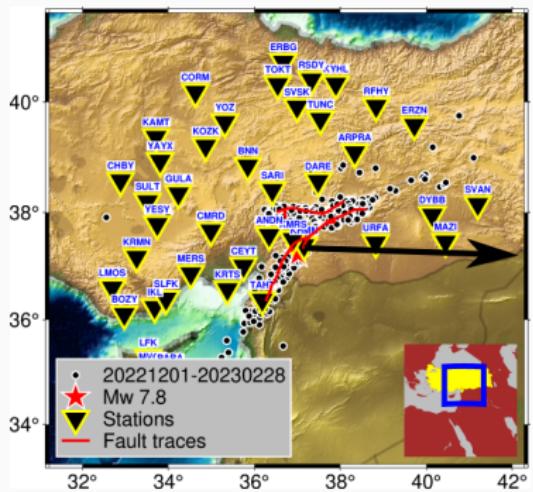
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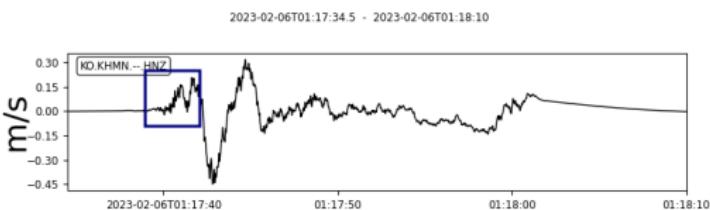
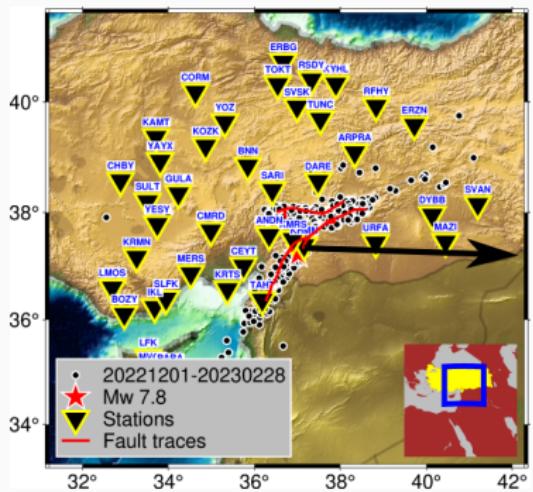
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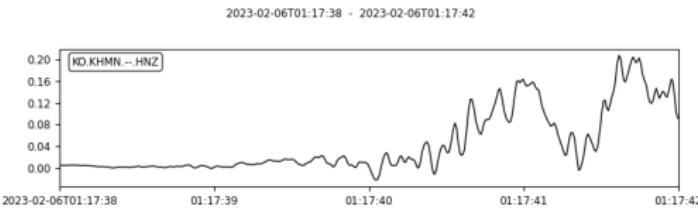
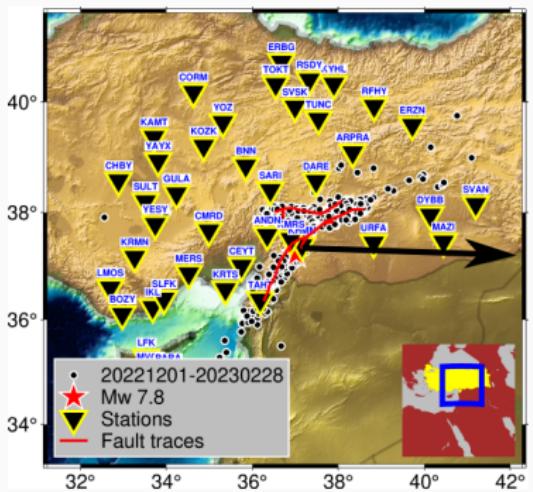
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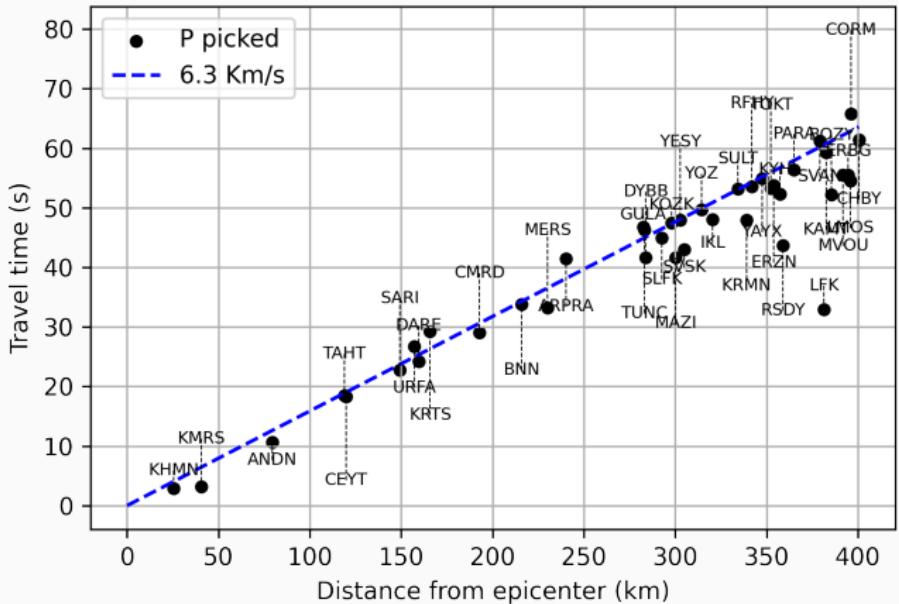
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I will focus on this initial phase!

First estimation of traveltimes: ???



Hypocenter: ???

Orfeus: longitude = 37.08 E, latitude = 37.17 N, depth = 20 km

GCMT: longitude = 37.021 E, latitude = 37.225 N, depth = 10 km

USGS: longitude = 37.019 E, latitude = 37.220 N, depth = 10 km

AFAD: Longitude = 37.043 E, latitude = 37.288 N, depth = 8.6 km

References

Woollam, J., Münchmeyer, J., Tilmann, F., Rietbrock, A., Lange, D., Bornstein, T., Diehl, T., Giunchi, C., Haslinger, F., Jozinović, D., et al. (2022). Seisbench—a toolbox for machine learning in seismology. *Seismological Society of America*, 93(3):1695–1709.