

The 2025 M7.7 Myanmar Earthquake and Epi-center Determination Lecture Part 2.

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How to find the epi-center?

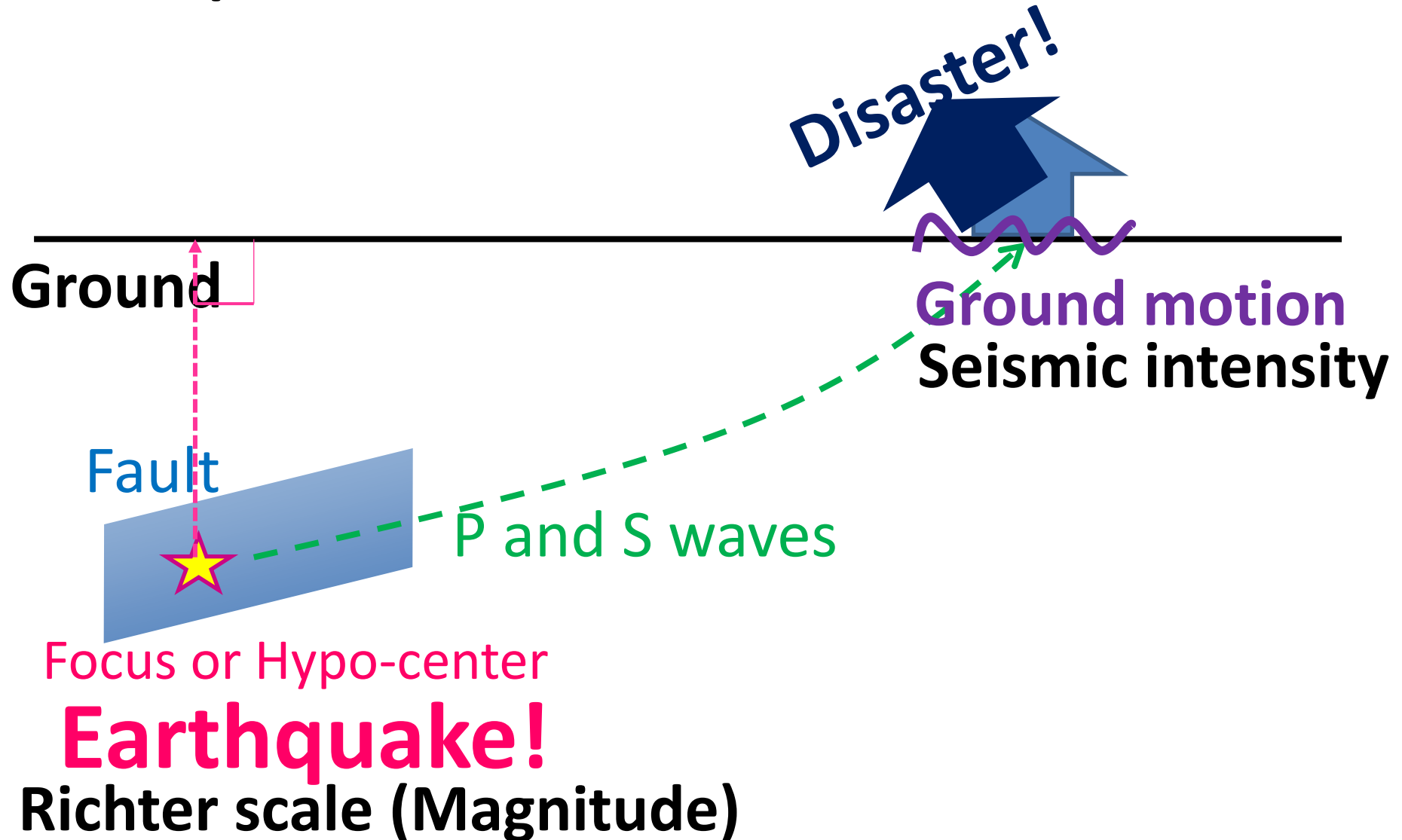
Exercise

prepare: mathematical compass

- Seismograms
- Map



Earthquake: cause and result



Hypo-Center Determination

- S-P time (old style)

$$D = k \times t \quad \text{Omori's formula}$$

D : distance of EQ [km]

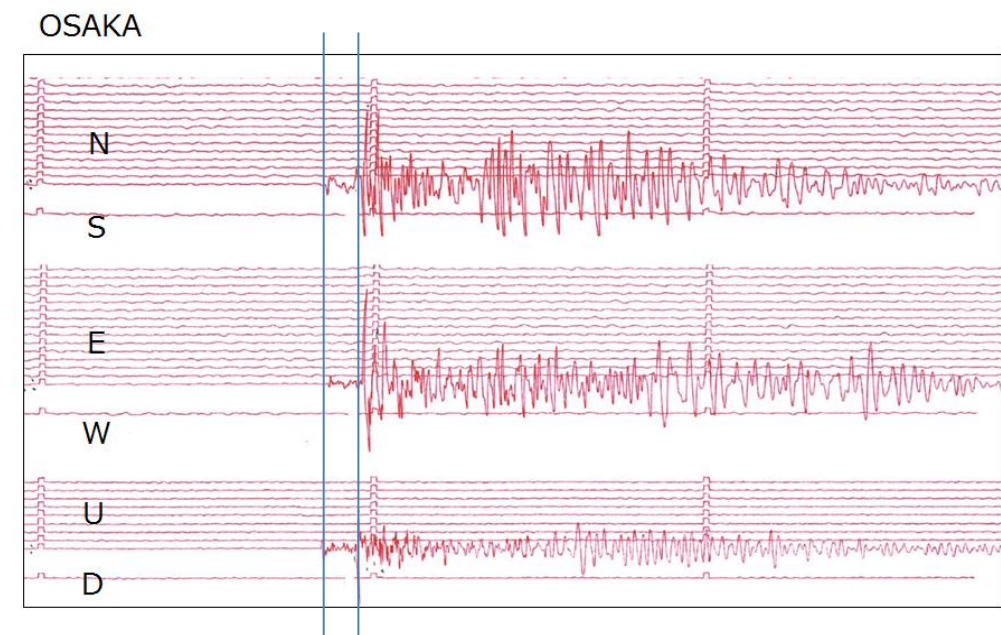
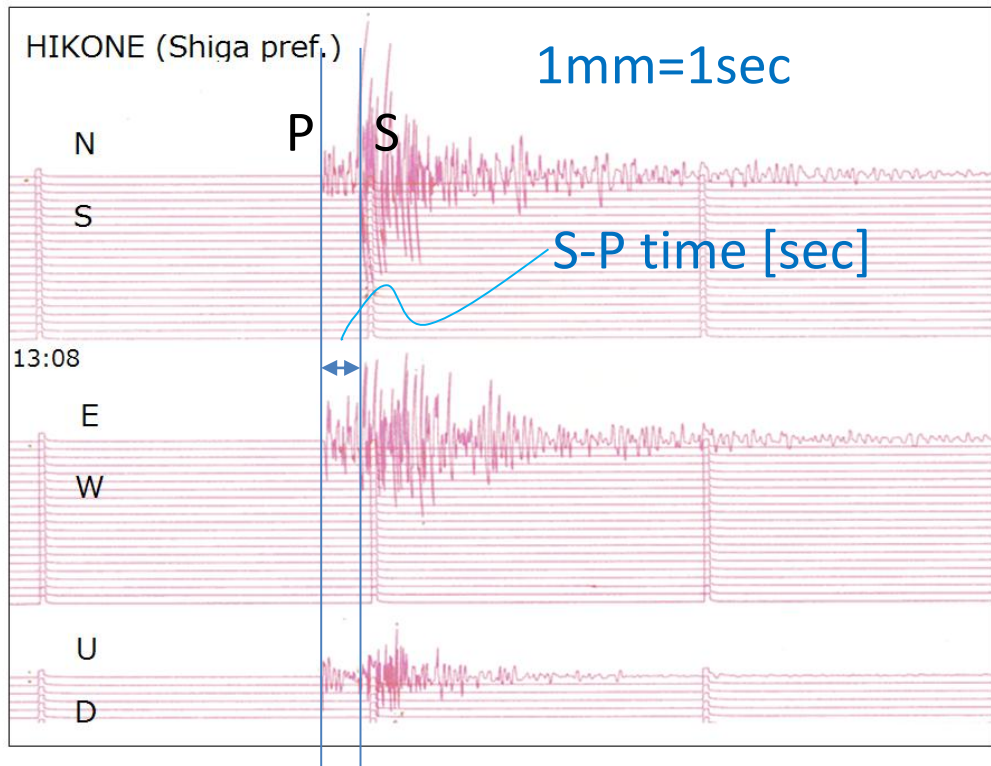
k : Omori constant (8-9 [km/sec])

t : S-P time [sec]

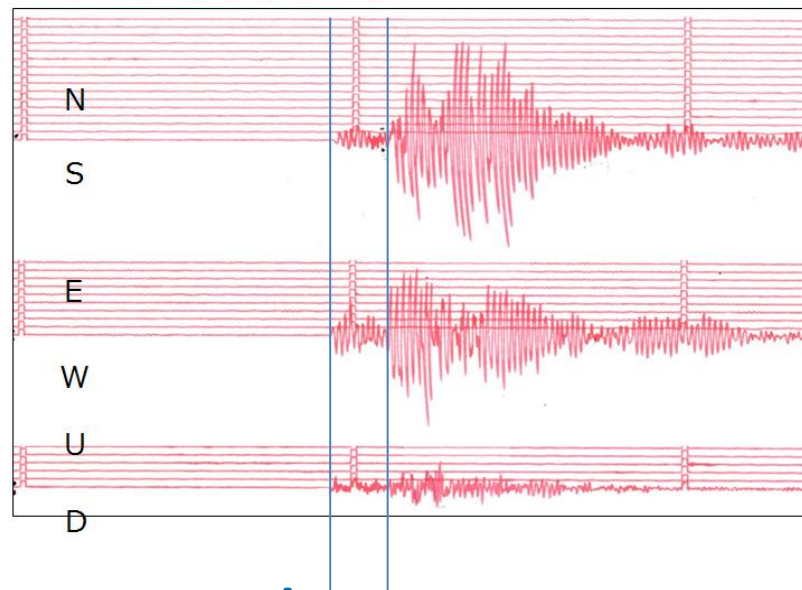
- P arrival times (modern style, development of crystal clock)
- Other methods (from seismic intensity, old documents etc.)



Fusakichi Omori



TOYO-OKA (Hyogo Pref.)



Here!

S-T time

$$D_{[km]} = k \times T_{[sec]}$$

$$K = 8.75_{[km/sec]}$$

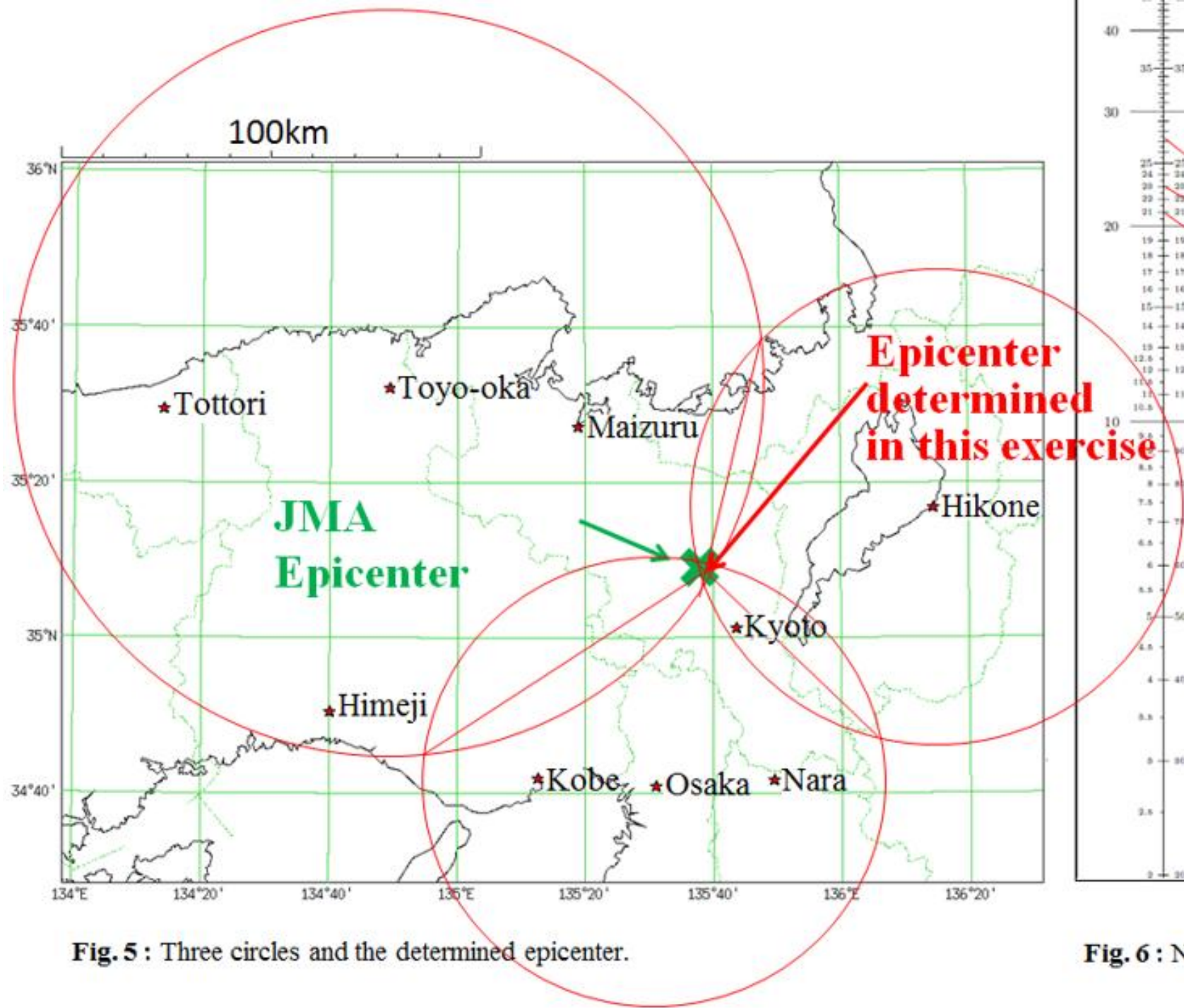
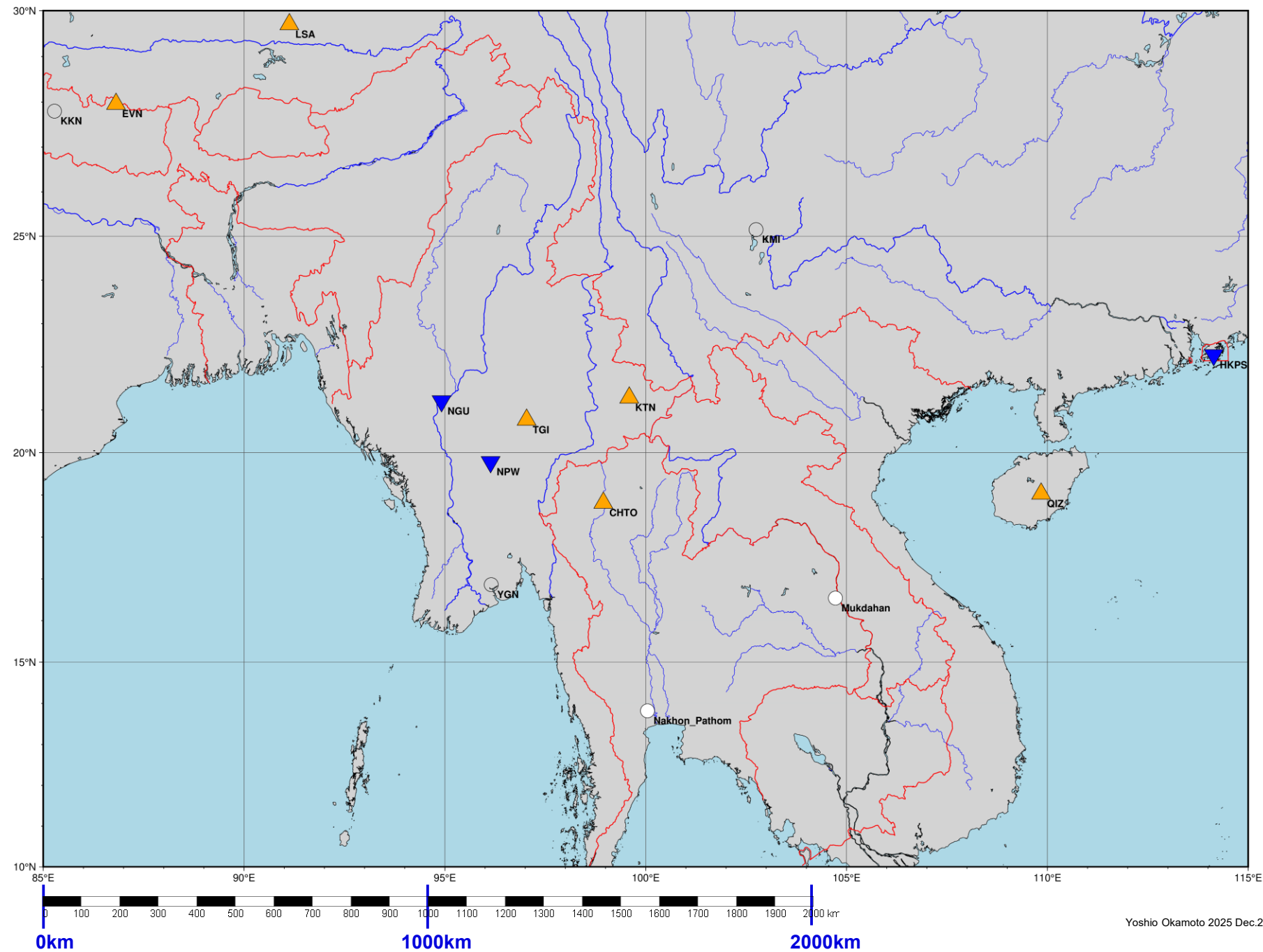
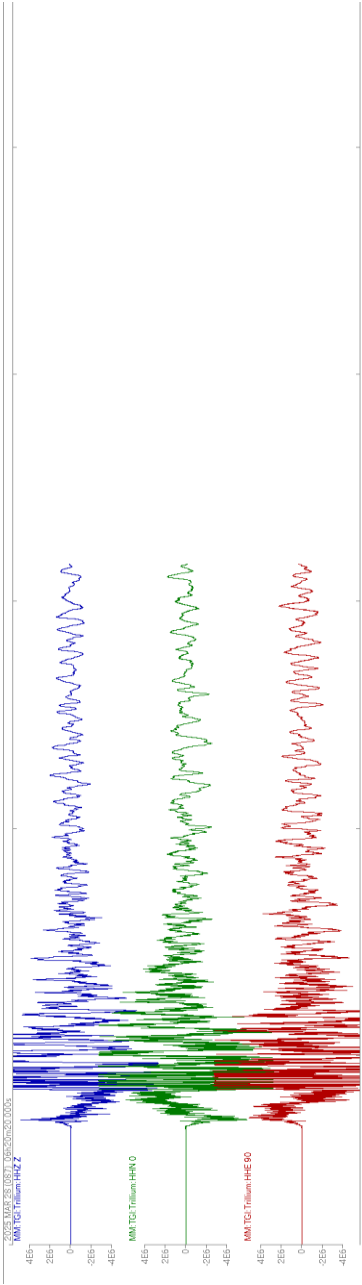


Fig. 5 : Three circles and the determined epicenter.

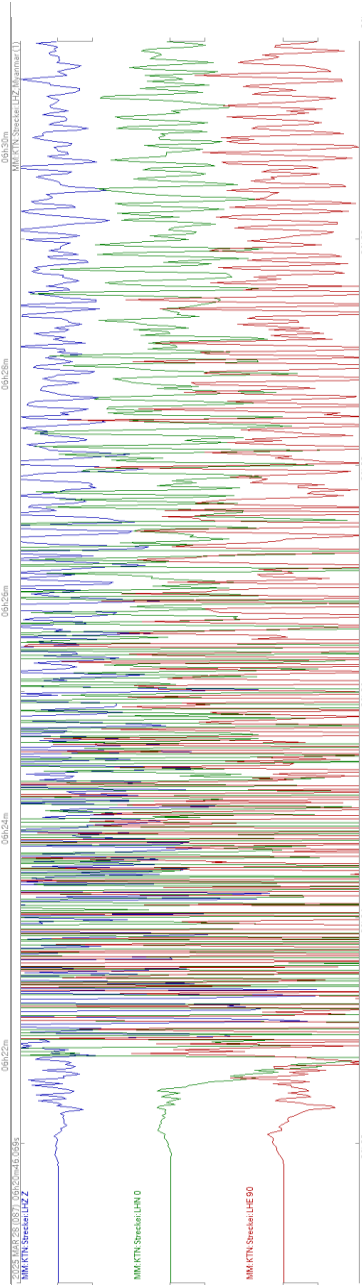
Fig. 6 : N

SE Asia Seismic Stations Mapv3

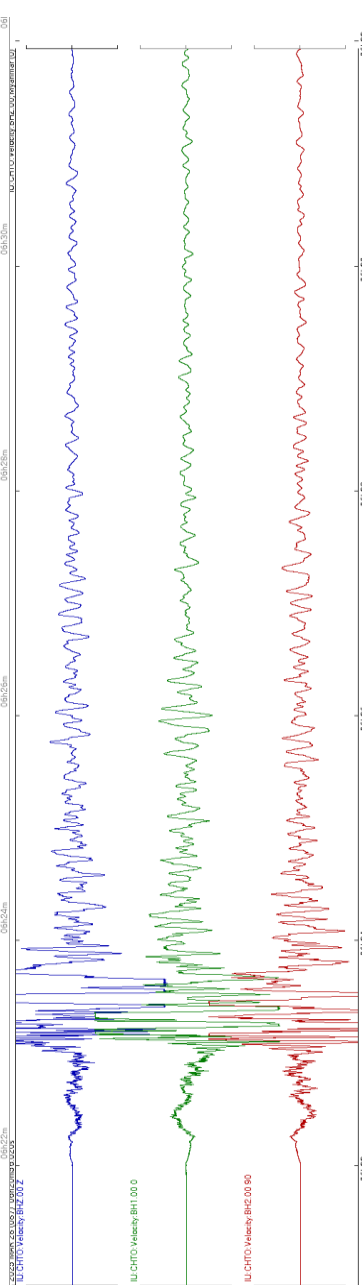




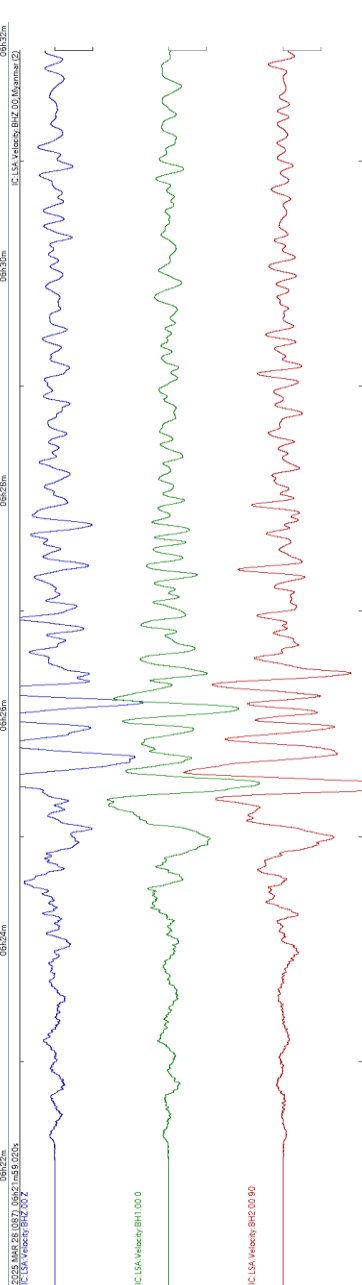
TGI



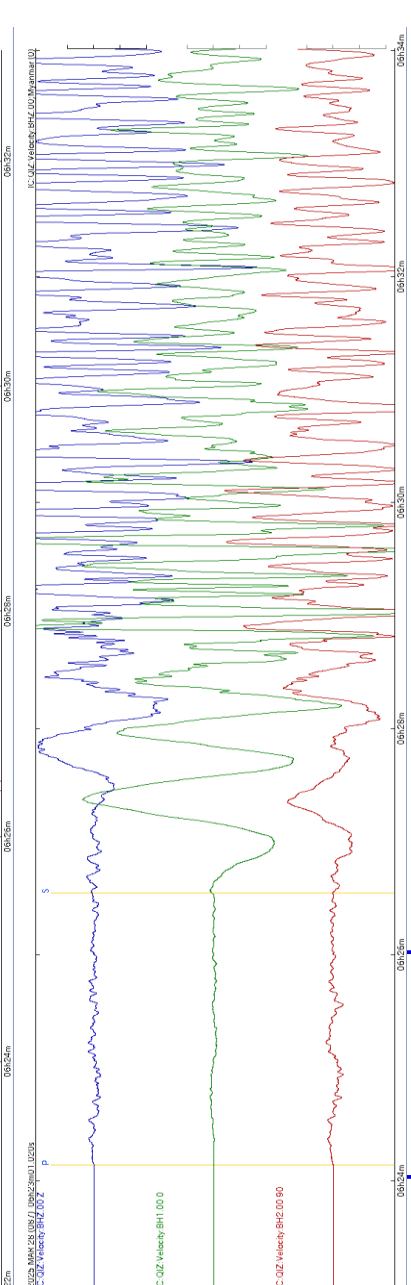
KTN



CHTO

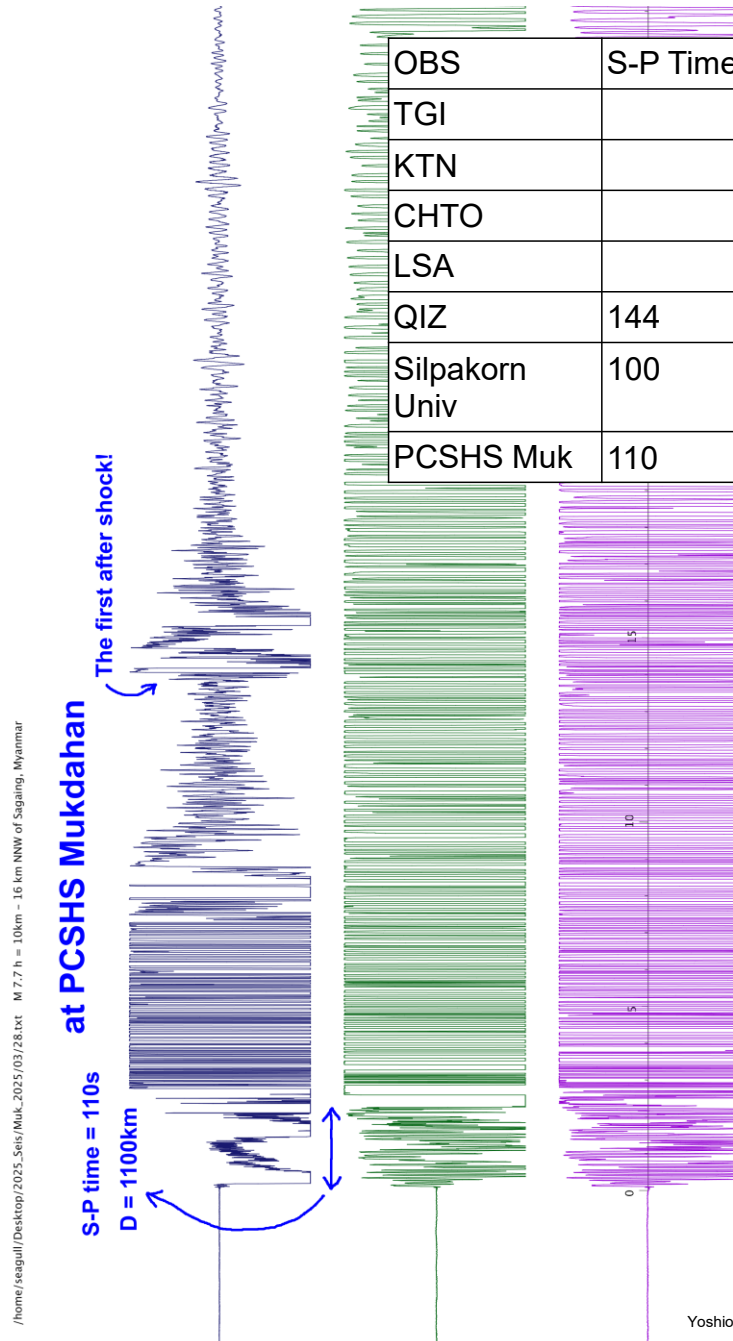
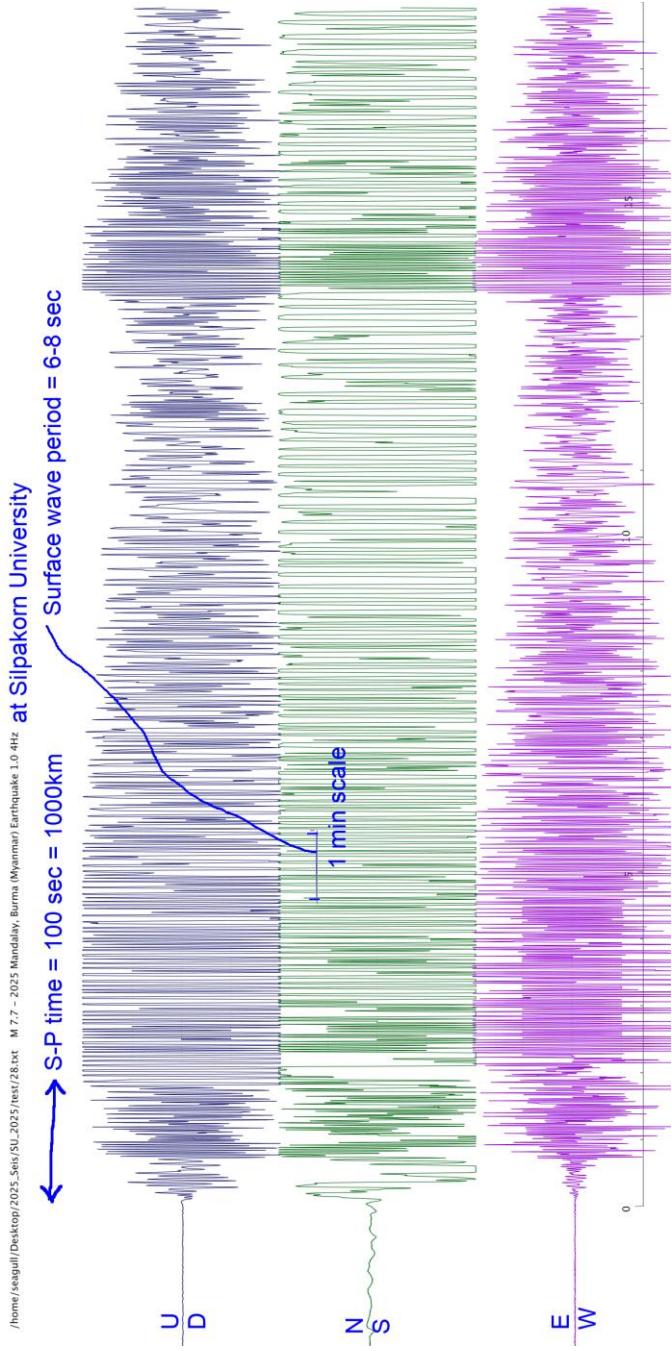


LSA

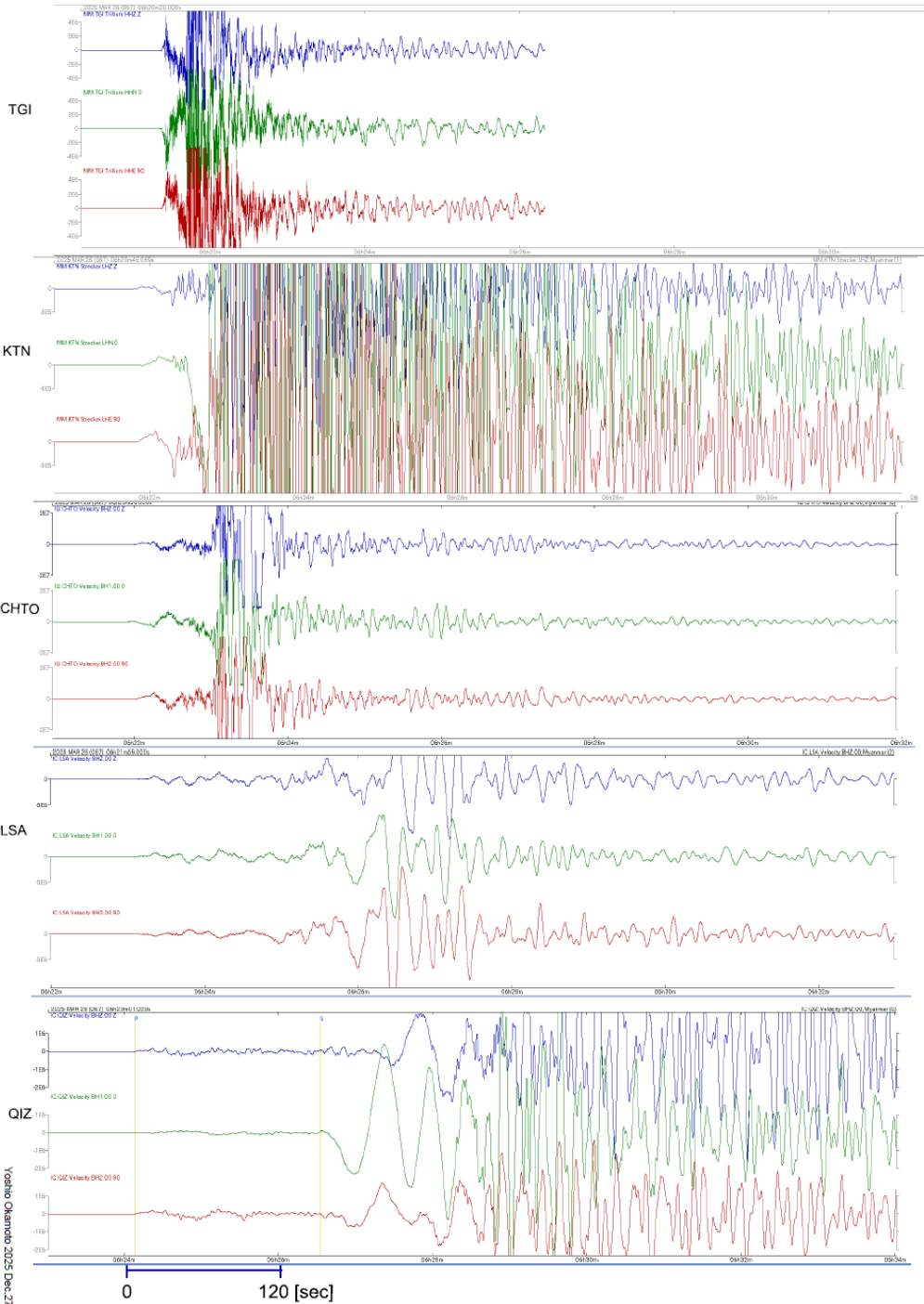


QIZ

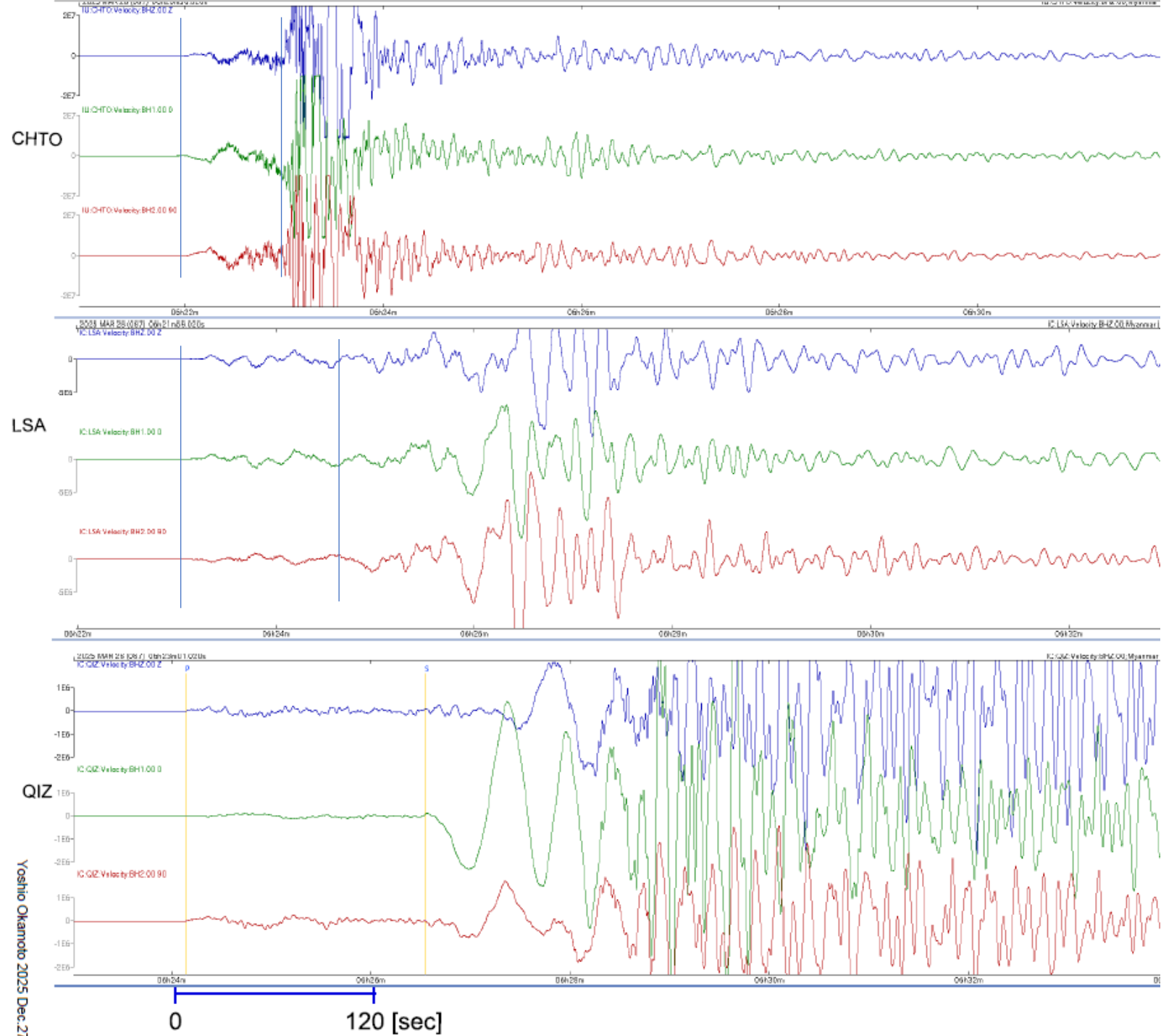
0 120 [sec]



OBS	S-P Time[s]	Omori K[km/s]	Distance[km]
TGI			
KTN			
CHTO			
LSA			
QIZ	144	10	
Silpakorn Univ	100	10	
PCSHS Muk	110	10	



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How to find the epi-center?

Many methods are developed

- The old-fashioned: using S-P times
- Major method: using P-arrival times

1. Draw 10 sec contour lines. And find the epicenter!
2. Next, to mark the U and D site using different colors (eg. red and blue)
3. Consider the mechanism of this earthquake!

