

Preliminary Tsunami Simulation of the Mw=6.7 Earthquake Bodrum, Turkey

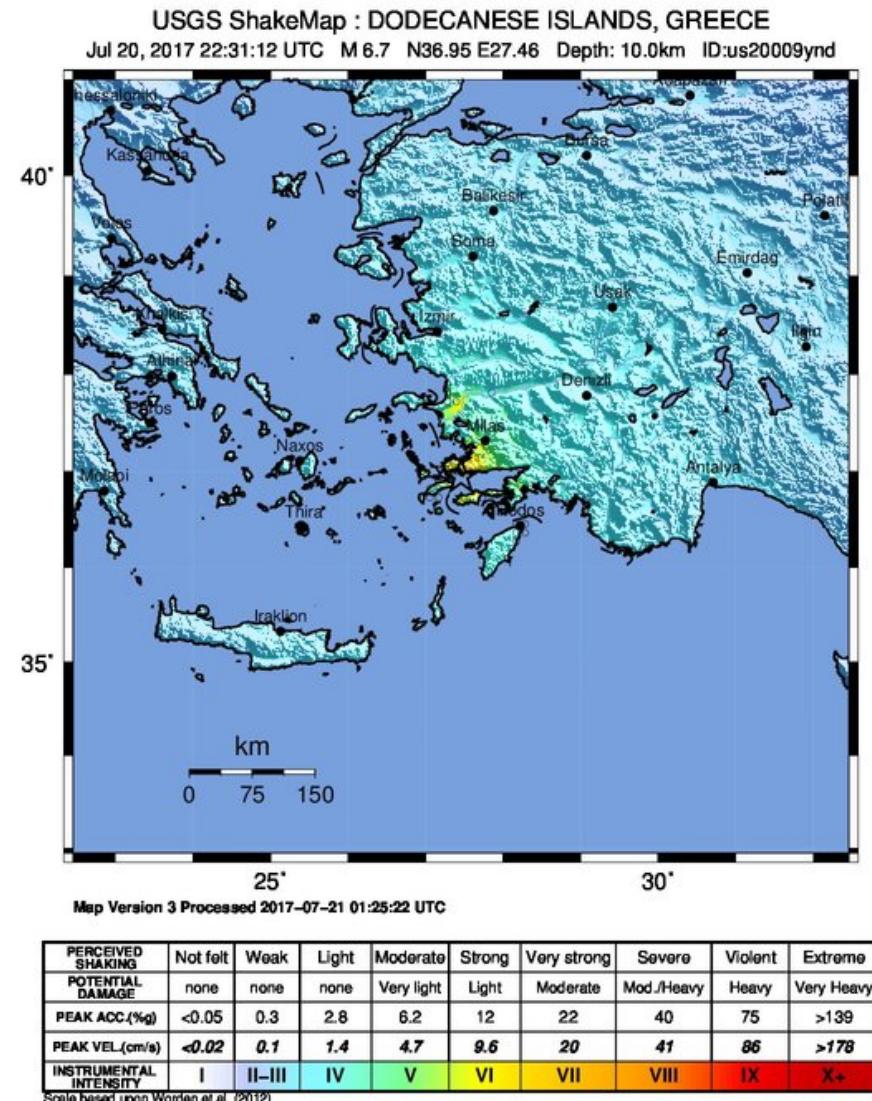
Bruno ADRIANO, Erick Mas, Shunichi Koshimura

Laboratory of Remote Sensing and Geoinformatics for Disaster Management
IRIDeS, Tohoku University, JAPAN



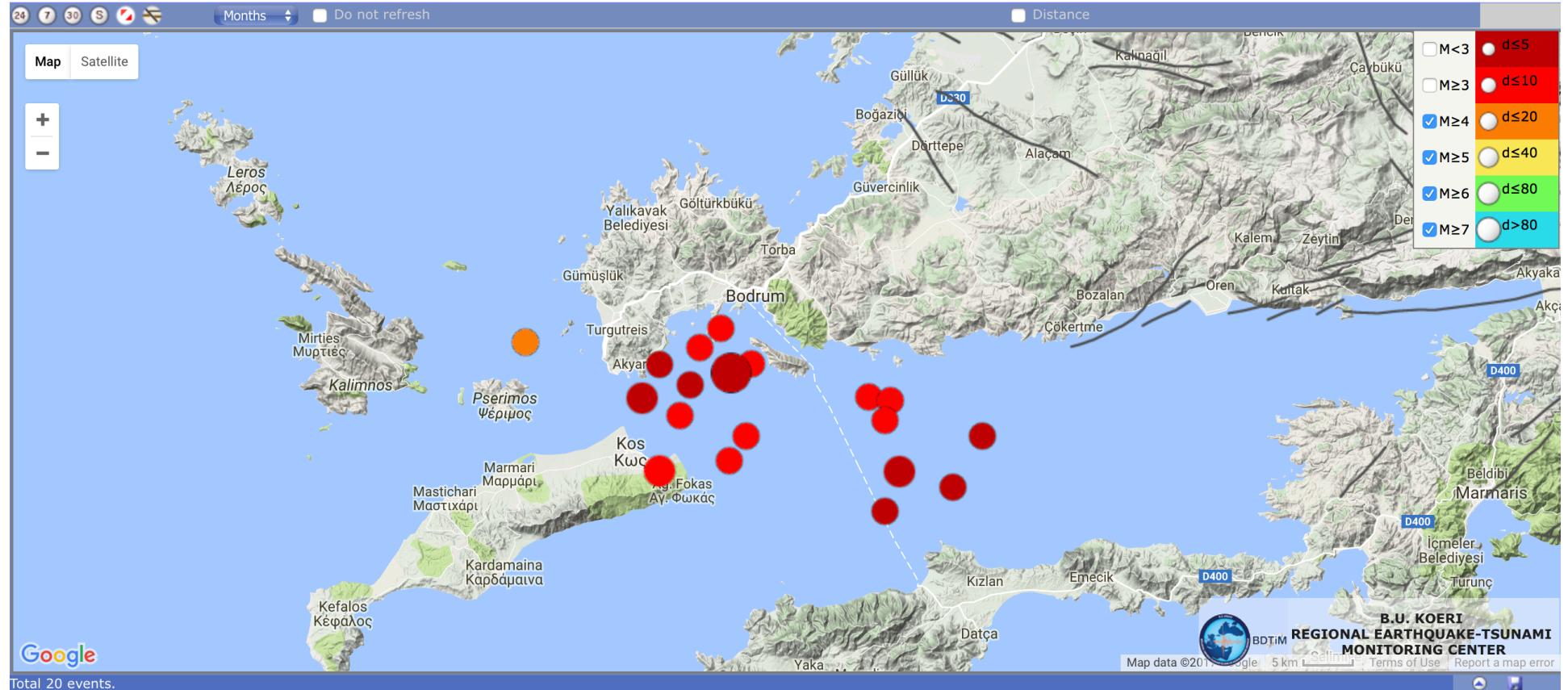
Background

Magnitude	6.7 mww
uncertainty	± 0.1
Location	36.949°N 27.458°E
uncertainty	± 3.9 km
Depth	10.0 km
uncertainty	± 1.4
Origin Time	2017-07-20 22:31:12.050 UTC
Number of Stations	-
Number of Phases	187
Minimum Distance	101.0 km (0.91°)
Travel Time Residual	0.89 s
Azimuthal Gap	26°
FE Region	DODECANESE ISLANDS, GREECE (369)
Review Status	REVIEWED
Catalog	US (us20009ynd)
Location Source	US ¹
Magnitude Source	US ¹
Contributor	US ¹



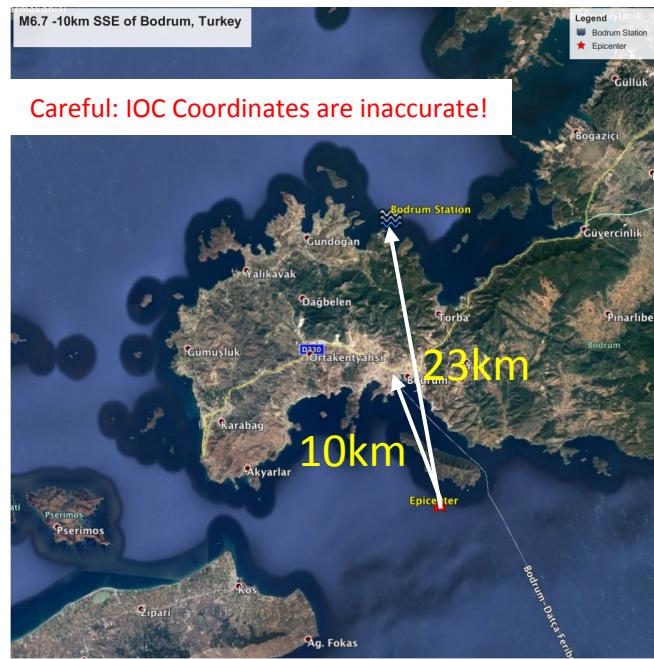
Background

Total 20 events over M4.0 within 24 hours.

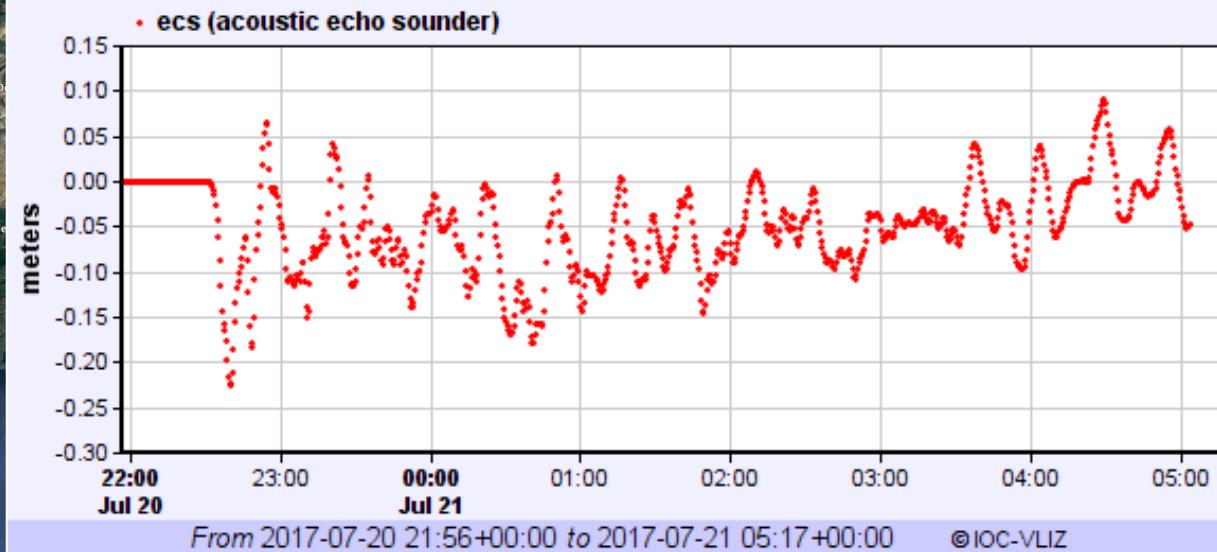


<http://www.koeri.boun.edu.tr/sismo/2/en/>





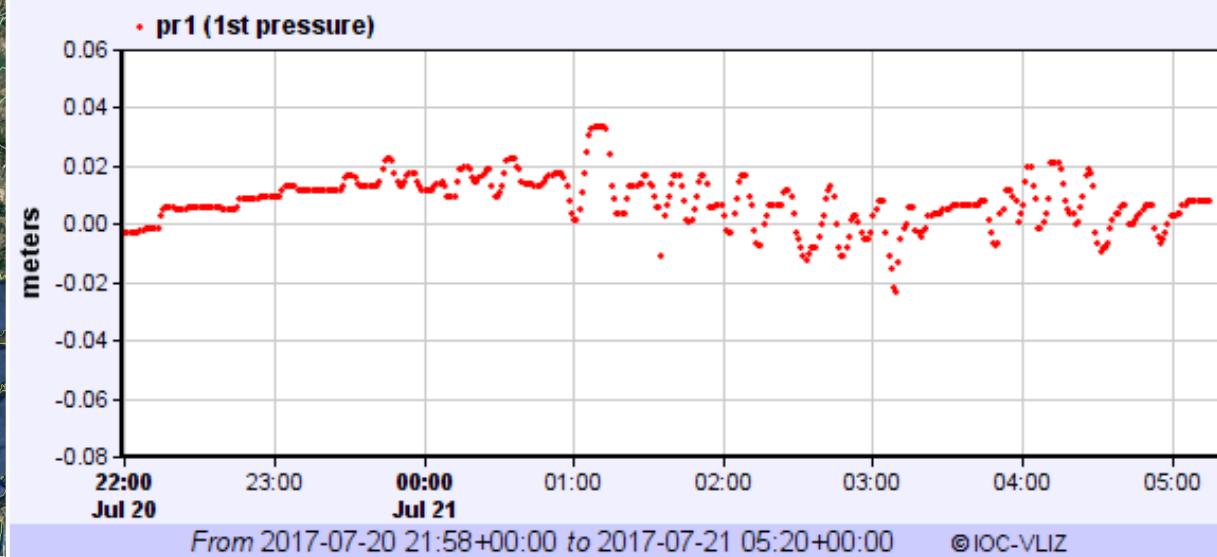
Sealevel at Bodrum station (offset: 1.053 m)



EQ: 22:31:12 UTC

Tsunami Arrival Time: Bodrum (~3min); Syros(~150min)

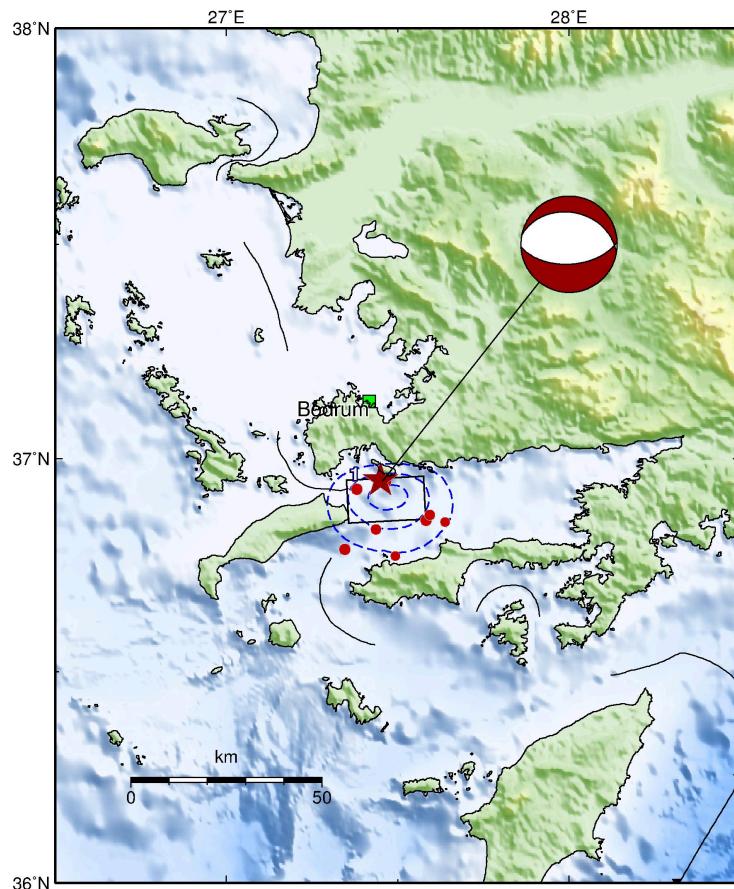
Sealevel at Syros station (offset: 0.626 m)



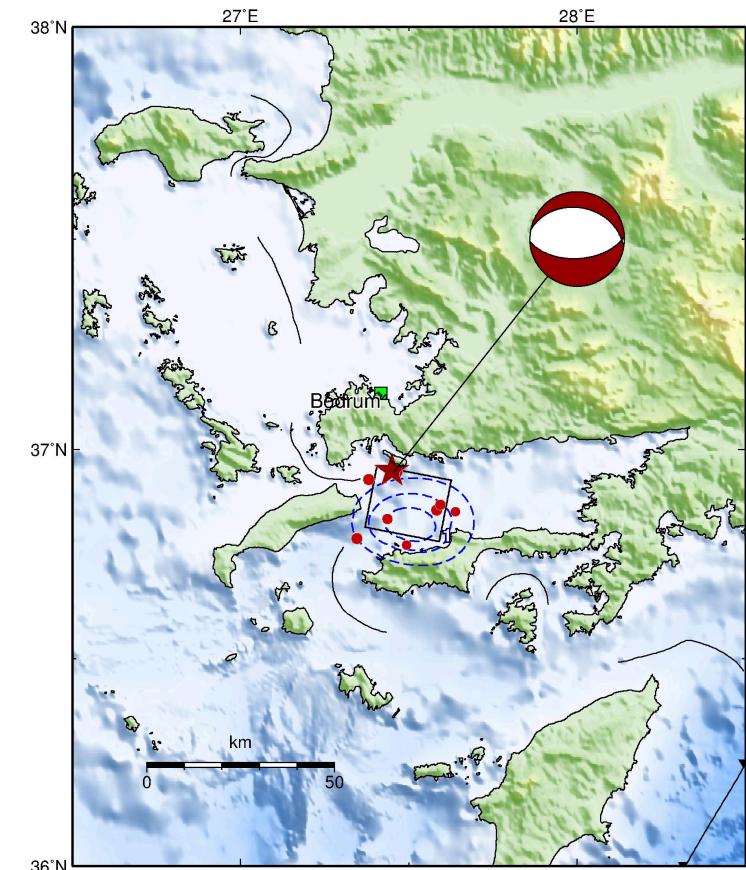
Earthquake Sources

USGS W-phase Moment Tensor solution

NP1 (Strike=87°, Dip=56°, Strike=-98°)



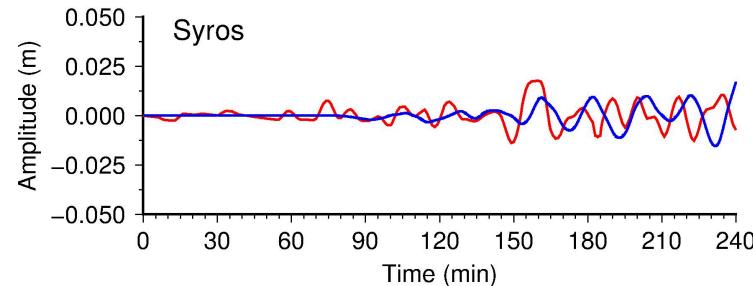
NP2 (Strike=281°, Dip=34°, Strike=-78°)



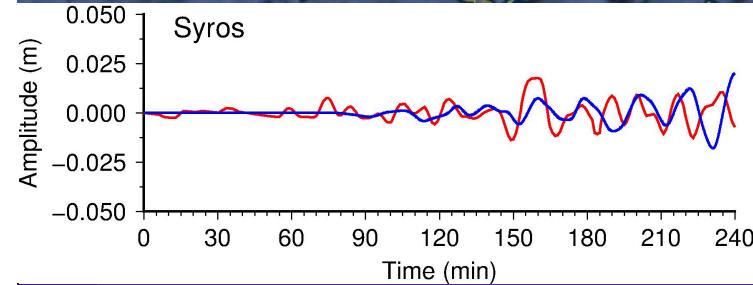
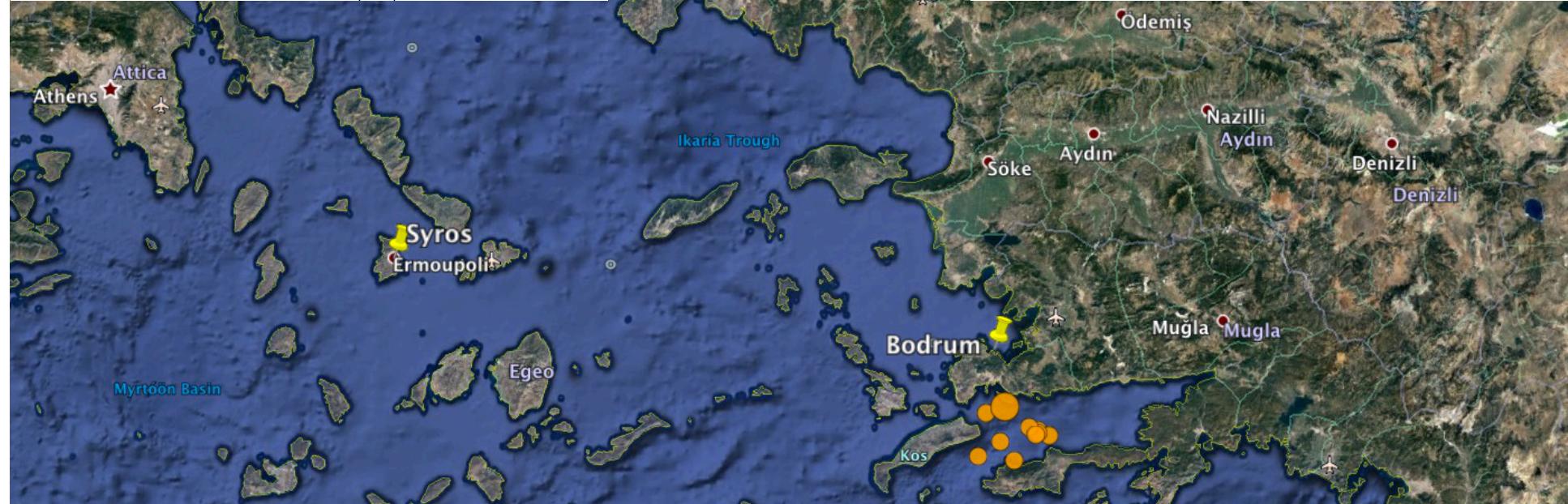
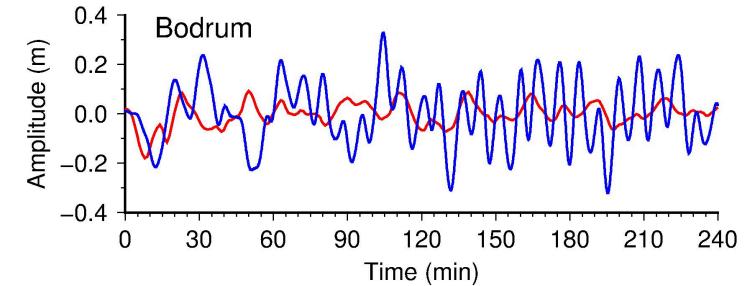
L = 20 km
W = 20km
Slip = 0.7m



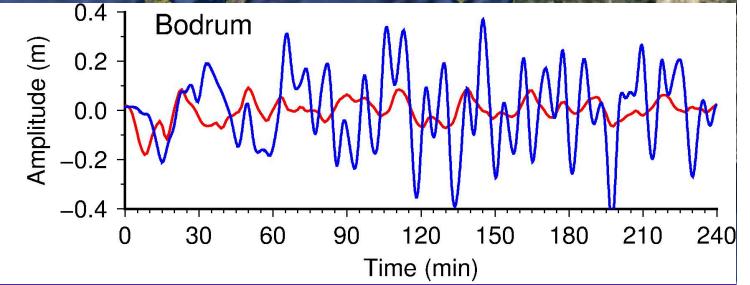
Comparison with Observed Data



Case NP1

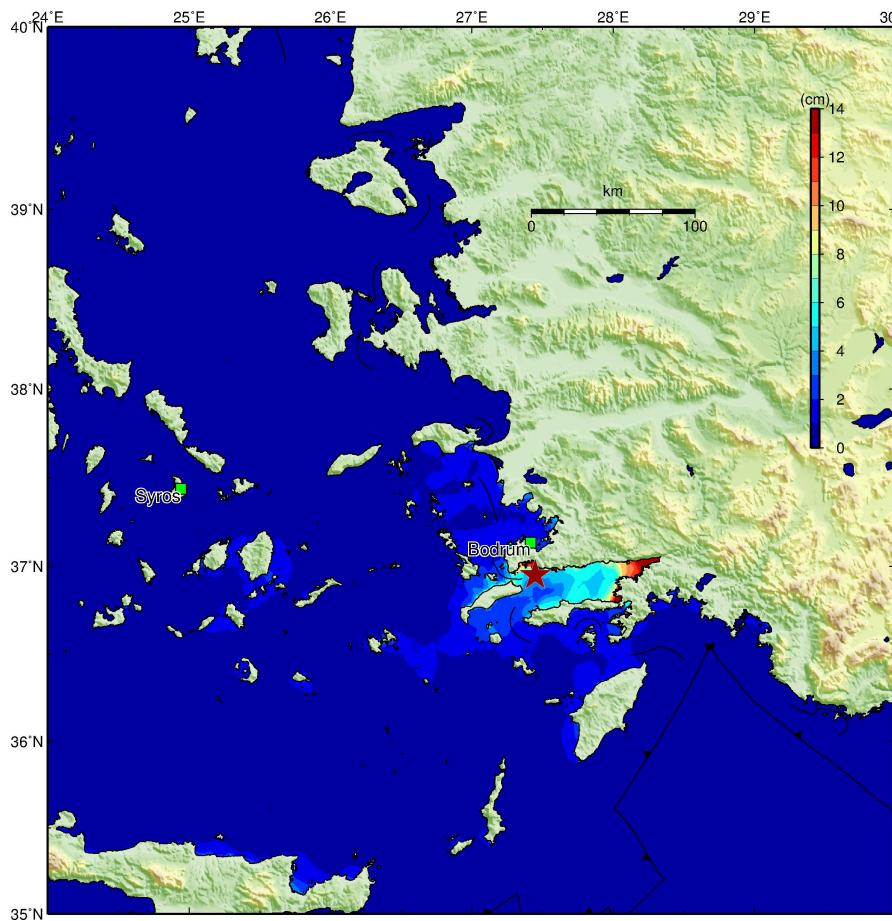


Case NP2

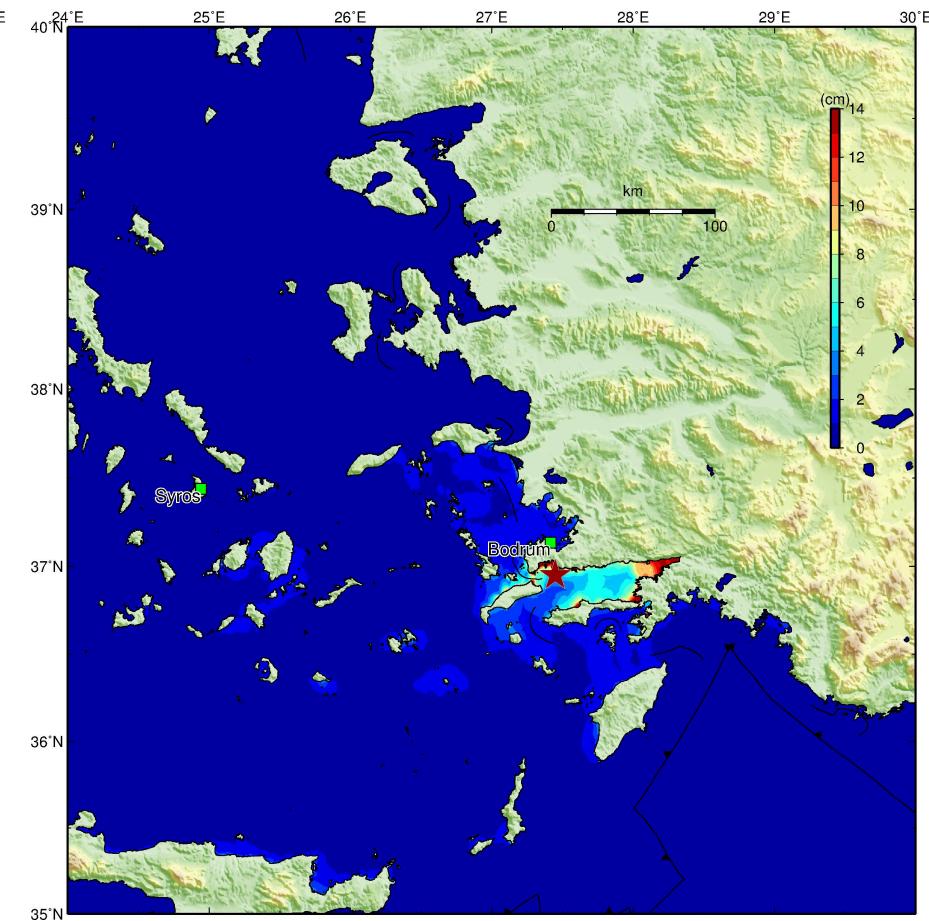


Maximum Tsunami Height

Case NP1



Case NP2



Comments

- The observed tsunami waveforms were taken from IOC website (<http://www.ioc-sealevelmonitoring.org>).
- The location of Bodrum tide gauge station was adjusted based on the location of the closest city.
- We removed tidal signals by fitting a simple polynomial functions.
- The maximum tsunami height in both cases is about 50cm.

