MAIN S&T RESULTS

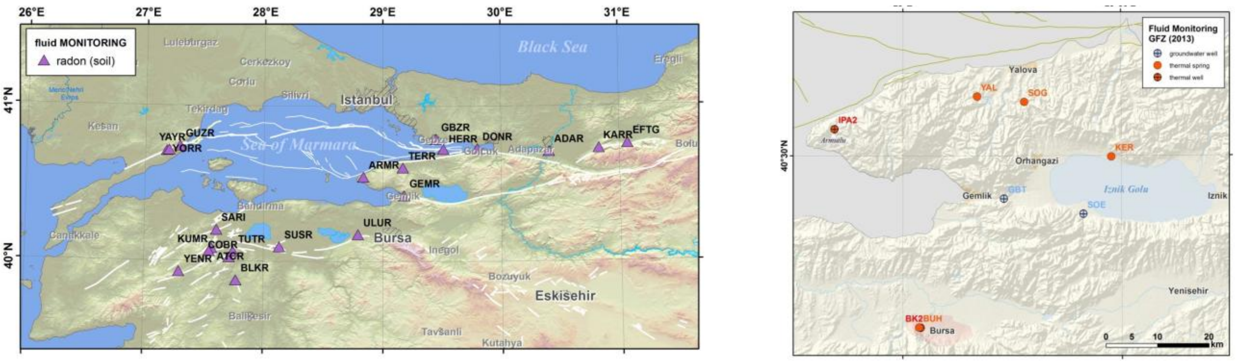

Figure 1 – (left)Radon soil gas monitoring network around the Sea of Marmara operated by MAM. (right) ARNET fluid monitoring network on the Armutlu peninsula. Orange symbols indicate thermal springs (BUH, SOG, KER, YAL), red symbols geothermal wells (BK2, IPA2); blue symbols depict the location of shallow groundwater wells (GBT, SOE).

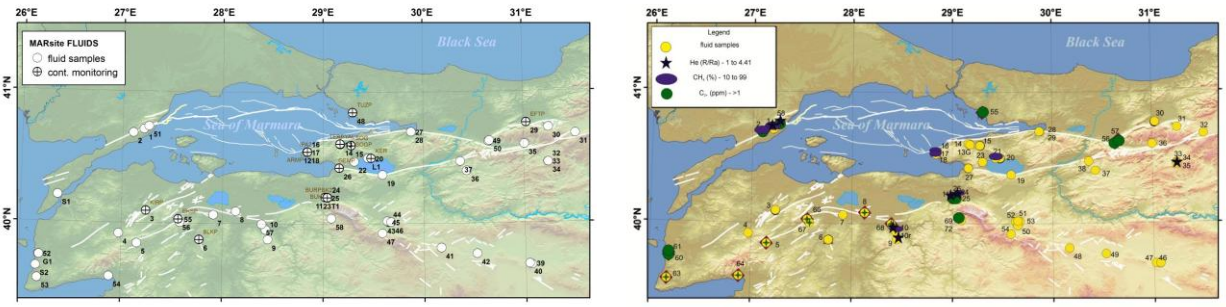

Figure 2: Fluid samples taken from 61 thermal and mineral water springs/wells during two MARsite fluid monitoring campaigns (2013 and 2014) around the Sea of Marmara (left) and distribution of sample sites around the Sea of Marmara with the main geochemical features of the gas phase (right).

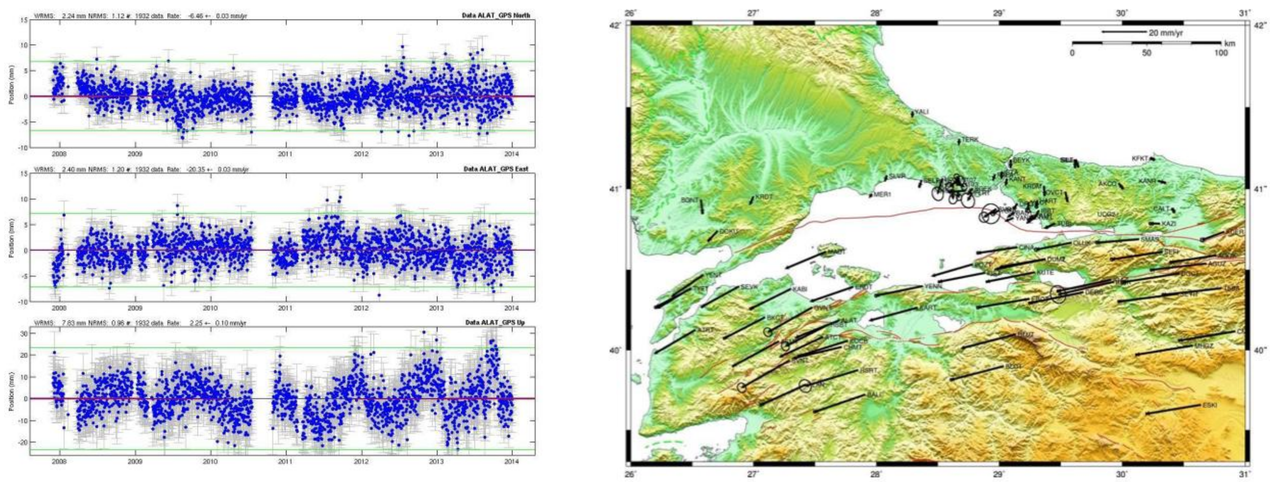

Figure 3. (left) Example time series for ALAT (in the graph, north-south, east-west and elevation components are shown respectively). The horizontal axis represents the GPS day, the vertical axis is representing the changes in the respective component coordinates are in mm scale. (right) Velocity field for Marmara Region (respect to Eurasia and with %95 confidence ellipses) (2002-2013)

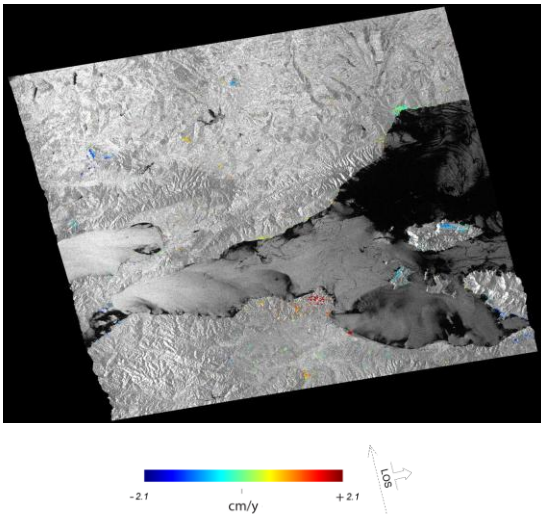

Figure 4. Results (cm / year) of the stacking procedure applied on 45 unwrapped interferograms.

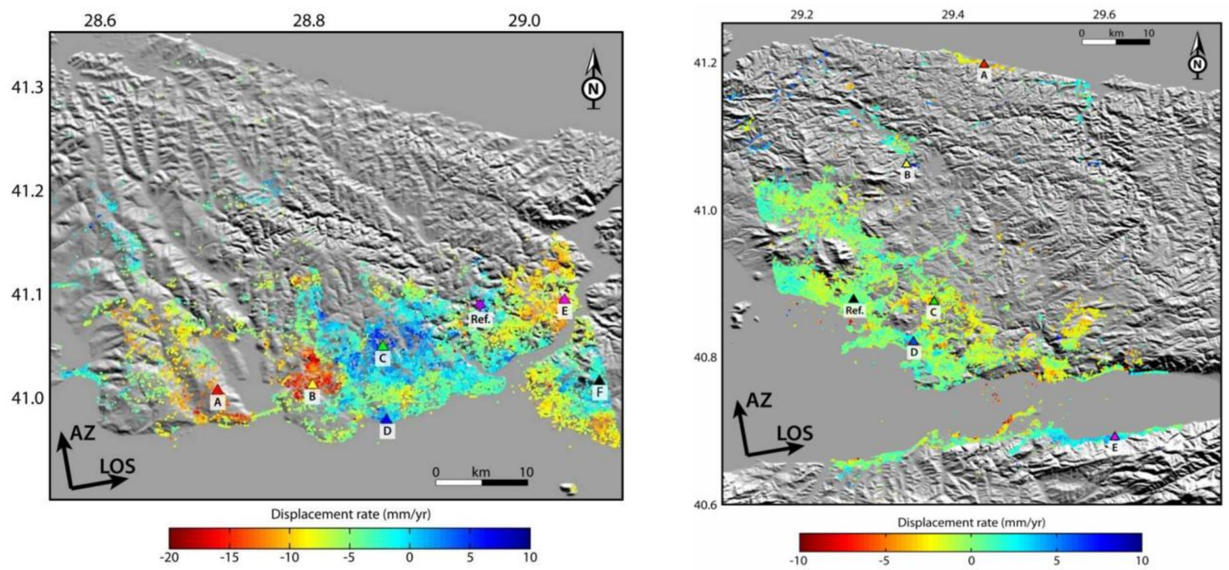

Figure 5: Mean velocity map for the CSK Western Track (preliminary results) retrieved by applying the StaMPS method and mean velocity map for the CSK Eastern Track (right).

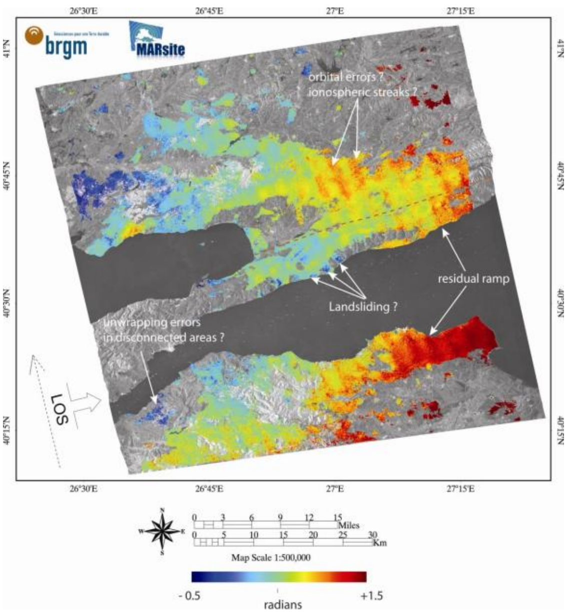

Figure 6: Stack of 45 interferograms with annotation about possible interpretation. The Ganos section of the NAFZ is plotted as a dashed red line. The colour scale is in radians / year ; it goes from -0.8 cm/year to 2.7 cm/year.

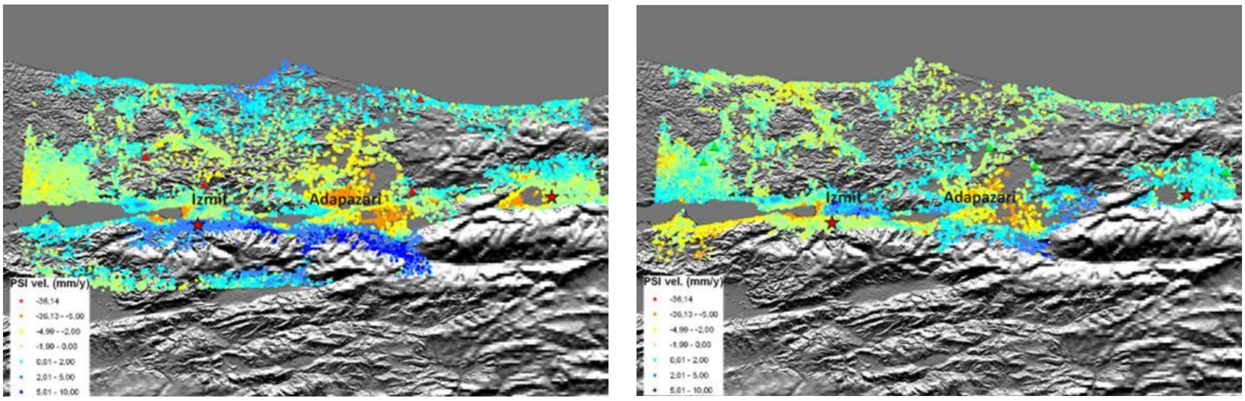

Figure 7: Envisat descending (left) and ascending (right) velocity maps. The red stars are the epicentres of 1999 earthquakes

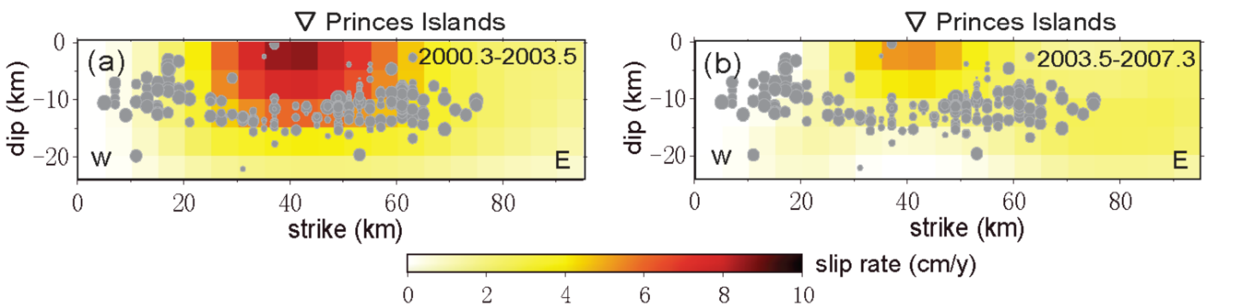

Figure 8: Slip rate distribution along the eastern MMF inferred from InSAR velocity. Red colours suggest an area of fault segment complexity that is located just offshore the Princess Islands. Gray dots are relocated microseismicities observed during 2006-2010 (Bohnhoff et al., 2013which were projected onto the fault and scaled with magnitude of associated earthquakes.

Figure 9: The tiltmeter (left), its installation (center), and dilatometer design (right).

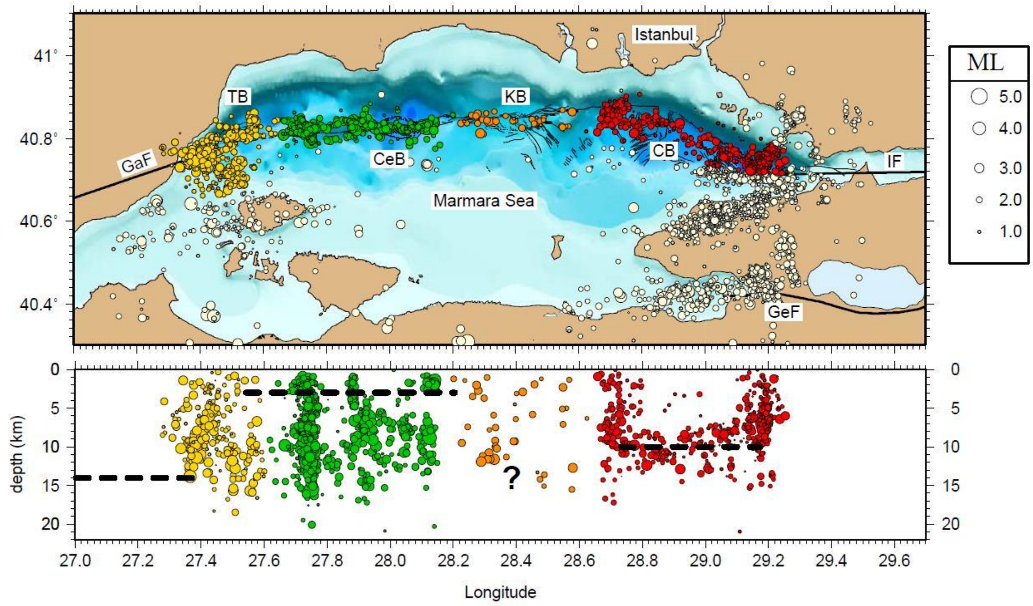

Figure 10: Map (top) and cross section (below) of the seismicity along the Main Marmara Fault during the period 2007-2012. Four domains are introduced: The Tekirdag basin (TB) in yellow, the Central basin (CeB) in green, the Kumburgaz basin (KB) in orange, and the Cinarcik basin (CB) in red. All the regional seismicity away from the MMF is plotted in white. Fault network:GaF for Ganos fault, IF for Izmit fault, GeF for Gemlik fault. Dotted lines in the depth section show the geodetically estimated locking depth of each domain.

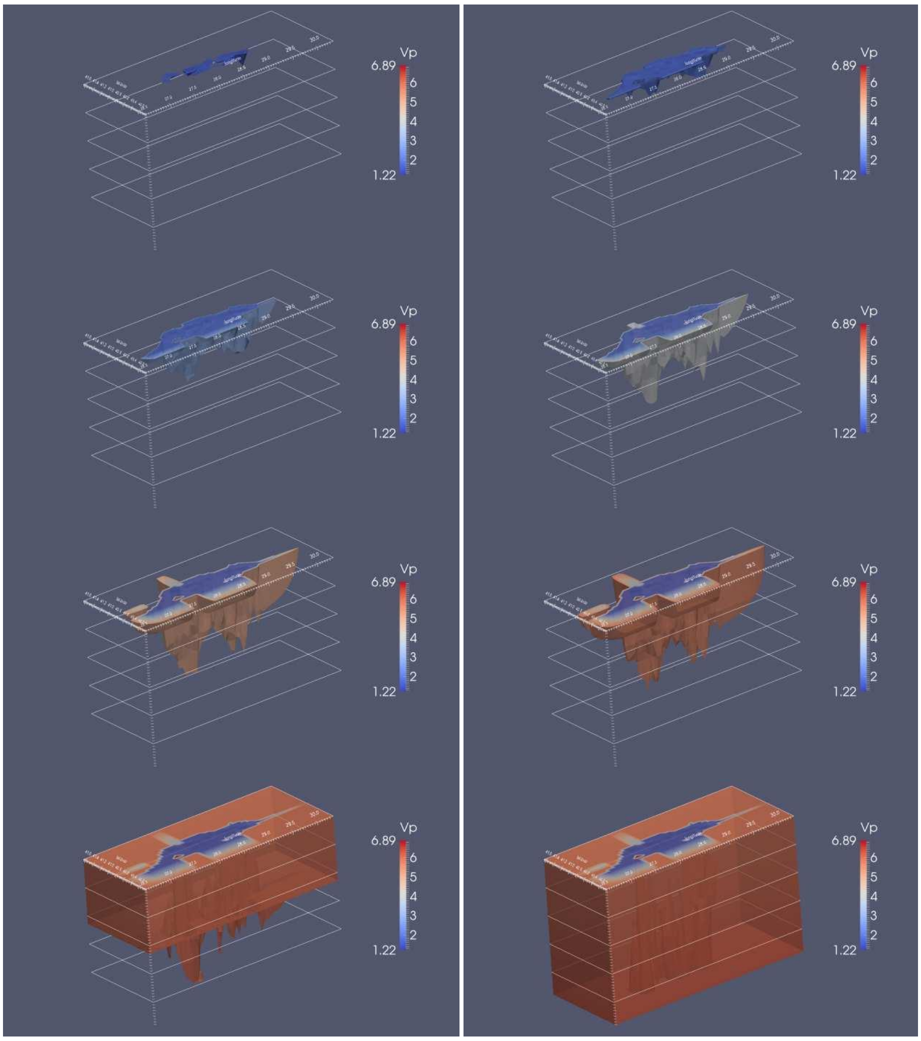

Figure 11: Representations of the 3D structural model of Bayrakci et al (2013). The horizontal planes in the each panel indicates every 2.5km along depth. The first panel represents the volume with Vp in the range 0 – 1.5 km/s. Similarly the following panels corresponds the volumes for a Vp equal or slower than 2, 3, 4, 5, 5.5, 5.9 and 6.1 km/s, respectively.

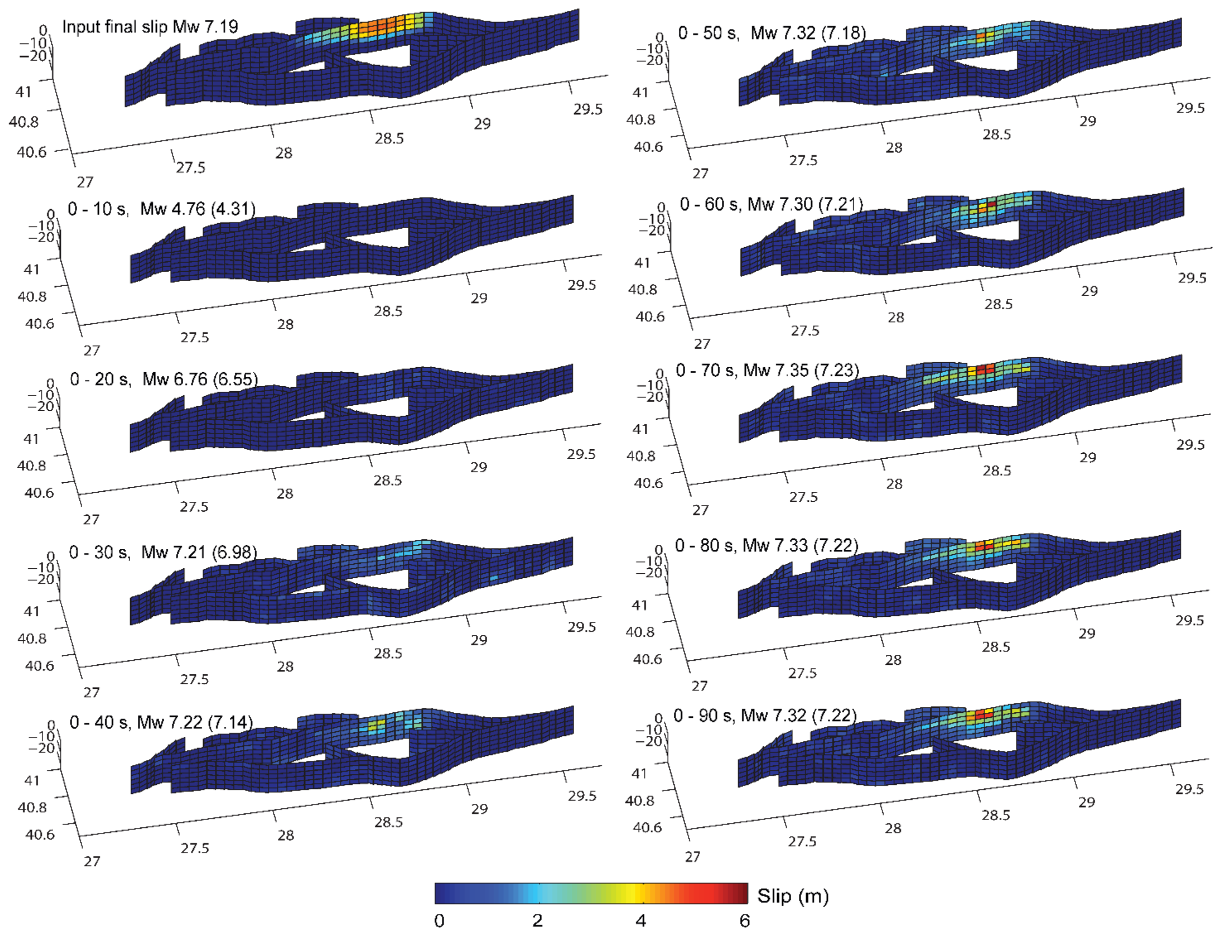

Figure 12. Comparison between the input (top left) and real-time reconstructed slip models. The moment magnitudes outside the brackets are inferred from the seismic moment distributed on the whole fault system, while that in the brackets corresponds to seismic moment located on the main rupture fault.

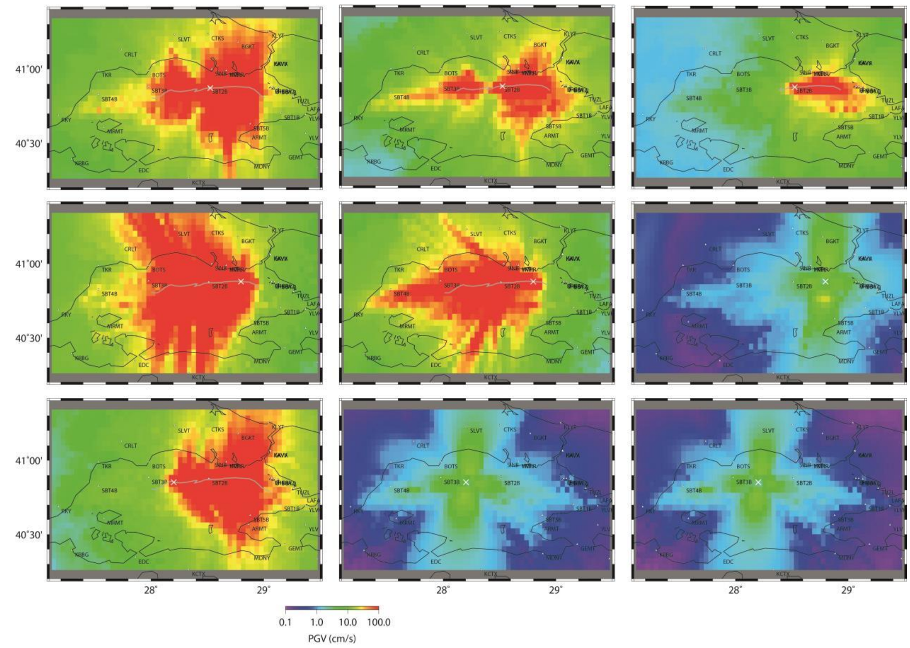

Figure 13: PGV (peak ground velocity) map for three components from each ground motion simulation. All the nine cases shown here are based on the fault geometry model LP. From left to right, the supposed stress level in generating the earthquake rupture scenario is respectively extremely high, high and sufficient. From top to bottom, the hypocenter position, denoted by a white cross, is located respectively in the central, eastern and western part of the fault. The ruptured fault trace is shown by a grey line. The time series of ground motions are processed by a 0.5 Hz low-pass filter.

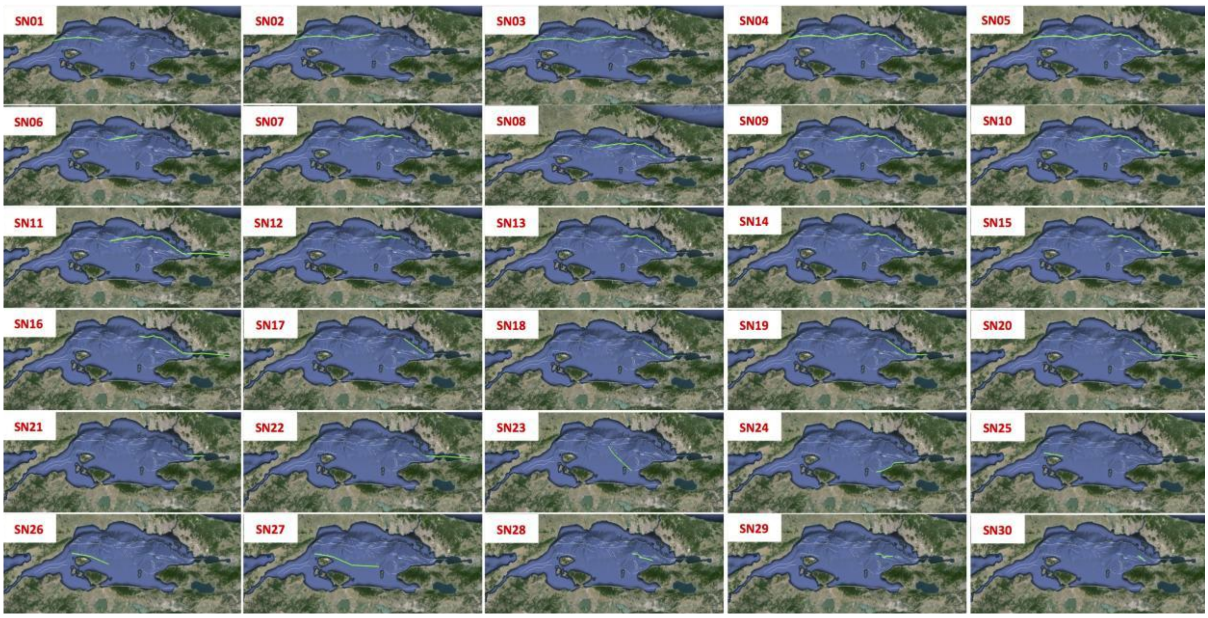

Figure 14: Map representation of the scenarios considered in this study.

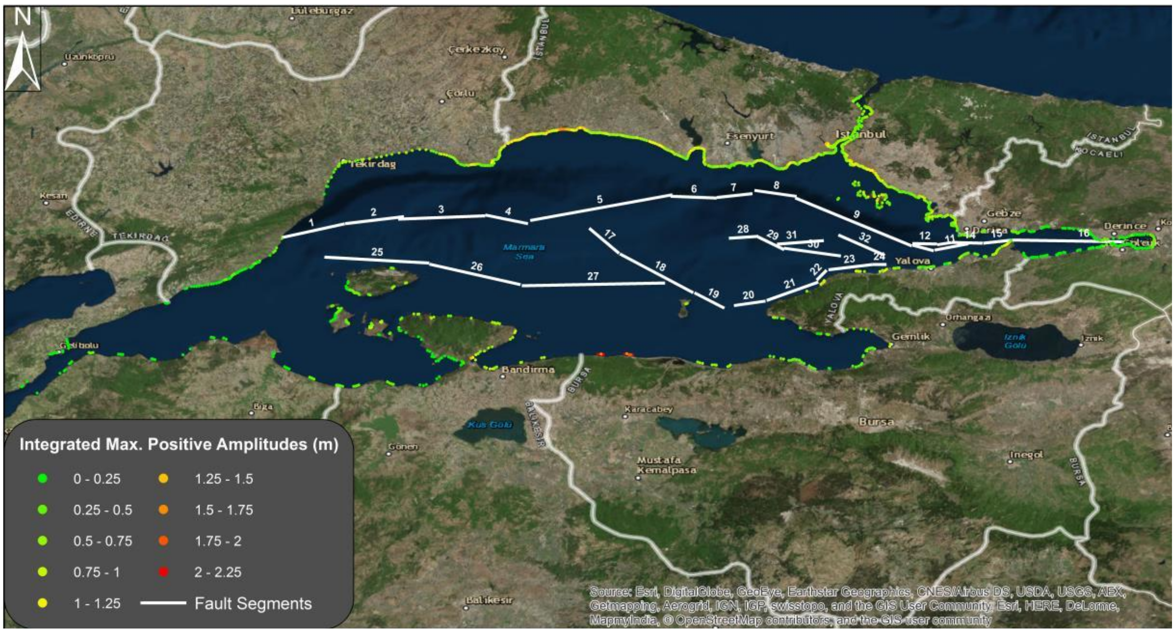

Figure 15: The distribution of calculated maximum wave amplitudes at each gauge points for all earthquake scenarios.

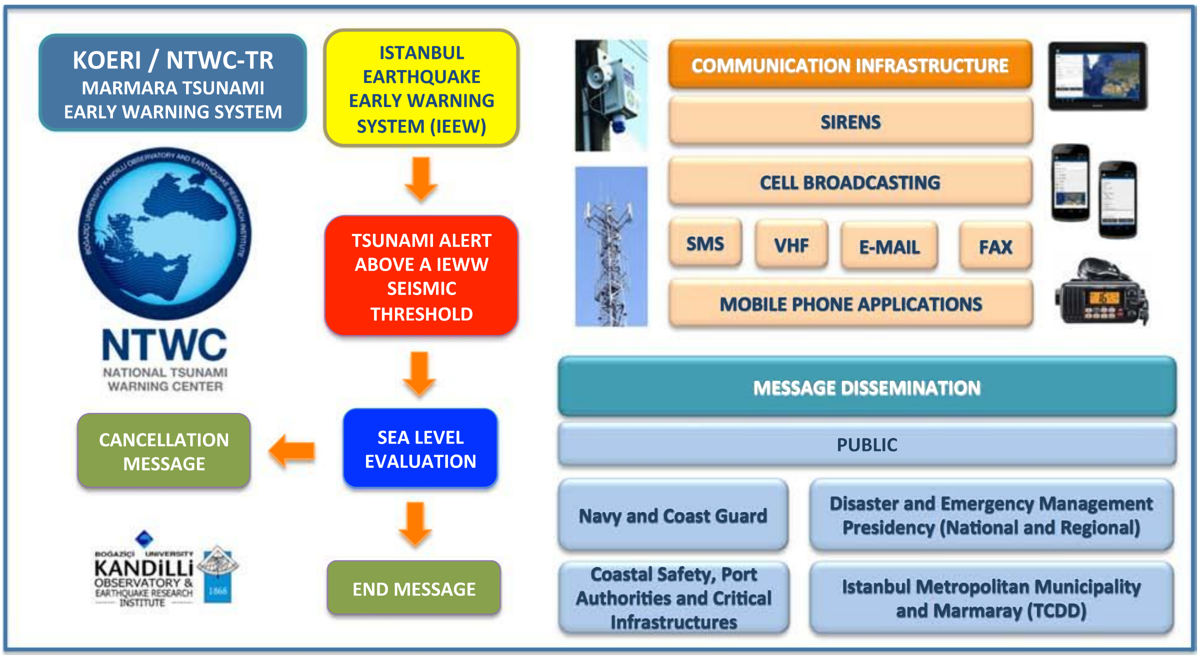

Figure 16: Schematic representation of the proposed tsunami early warning system in the Marmara Sea

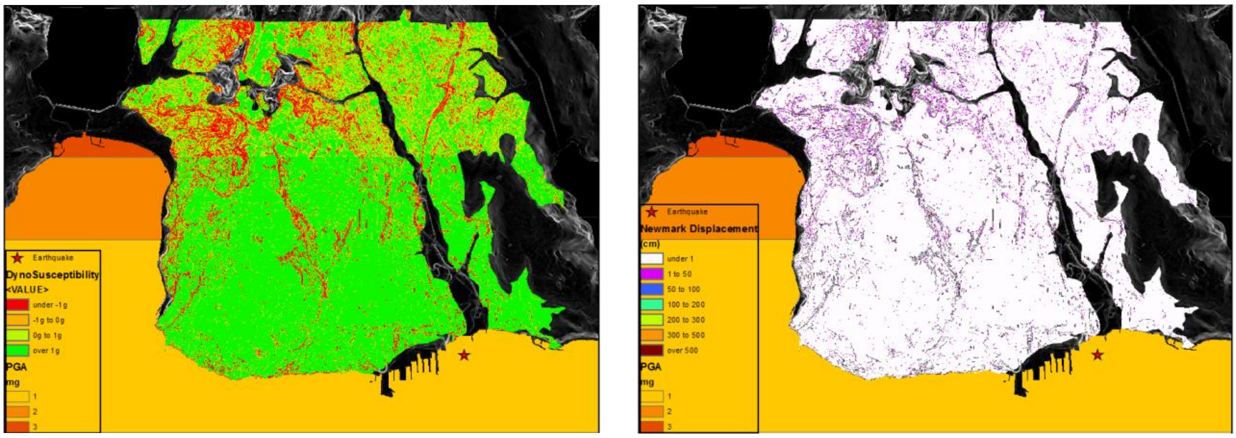

Figure 17 : (left) Dynamic landslide susceptibility and (right) Newmark's displacement (Jibson, 2007).

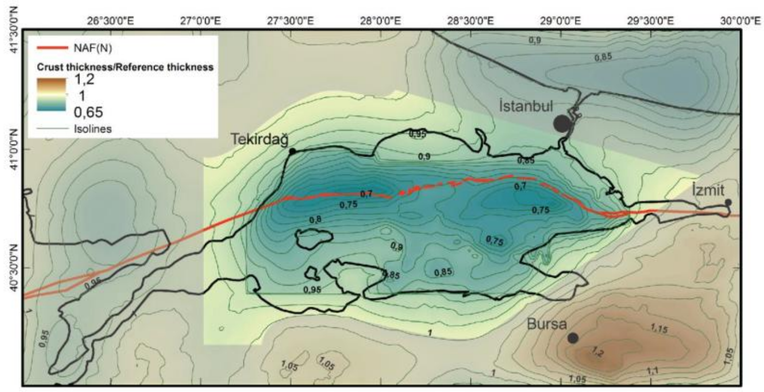

Figure 18: Thinning rate corresponding to our model crust thickness over 30 km reference thickness. The unshaded area correspond to the zone that was considered in a crust volume calculation to estimate a 2100±250 km2 extension surface in the Marmara Sea. The rest of the area was set aside as we considered that the Moho topography below was controlled by pre-Neogene events.

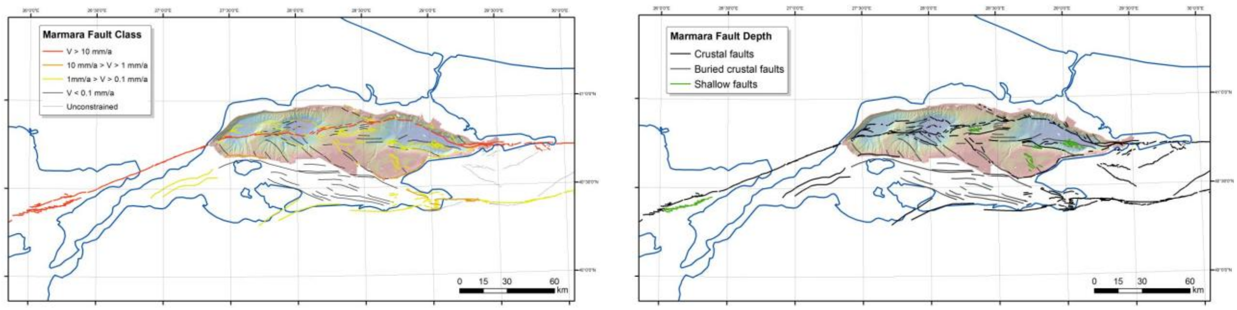

Figure 19. Classification of faults according to their activity level (left) and depth span (right).

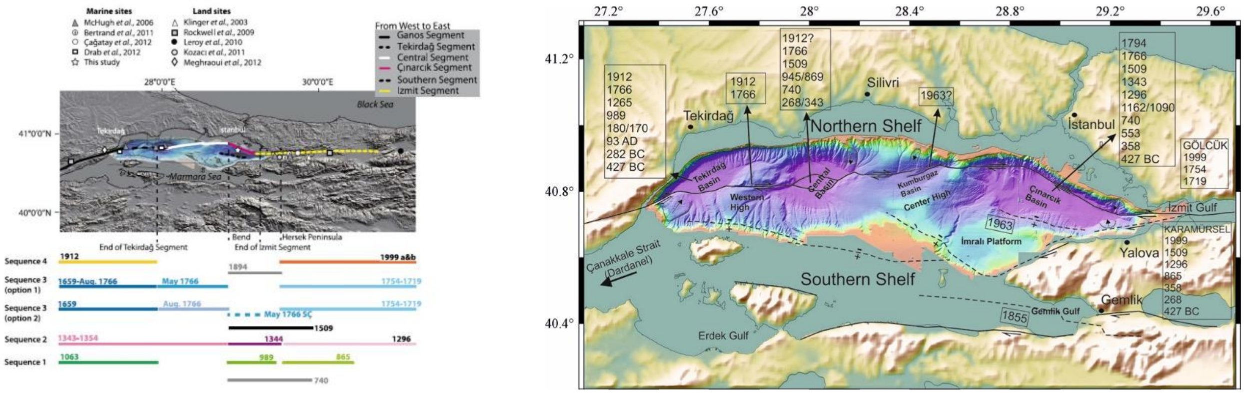

Figure 20: (left) Proposed rupture scenario for Mw >6:8 earthquakes in the Marmara Sea between C.E. 740 and 1999 (Drab et al., 2015). Four sequences are observed, but only three are complete. The twentieth century westward propagation had not yet ruptured the eastern Marmara Sea. The scenario is compatible with a recent Coulomb stress analysis (Pondard et al., 2007) and description of damage (Ambraseys, 2002). Different shapes represent onland and submarine paleoseismological investigations of NAF ruptures in and around the Marmara Sea. (right) The multi-beam bathymetry map showing historical earthquakes recorded by different sediment cores along the various segments of northern branch that were documented by various studies in the SoM (Çağatay et al., 2012; Drab et al., 2012, 2015; McHugh et al., 2014; Beck et al., 2015).

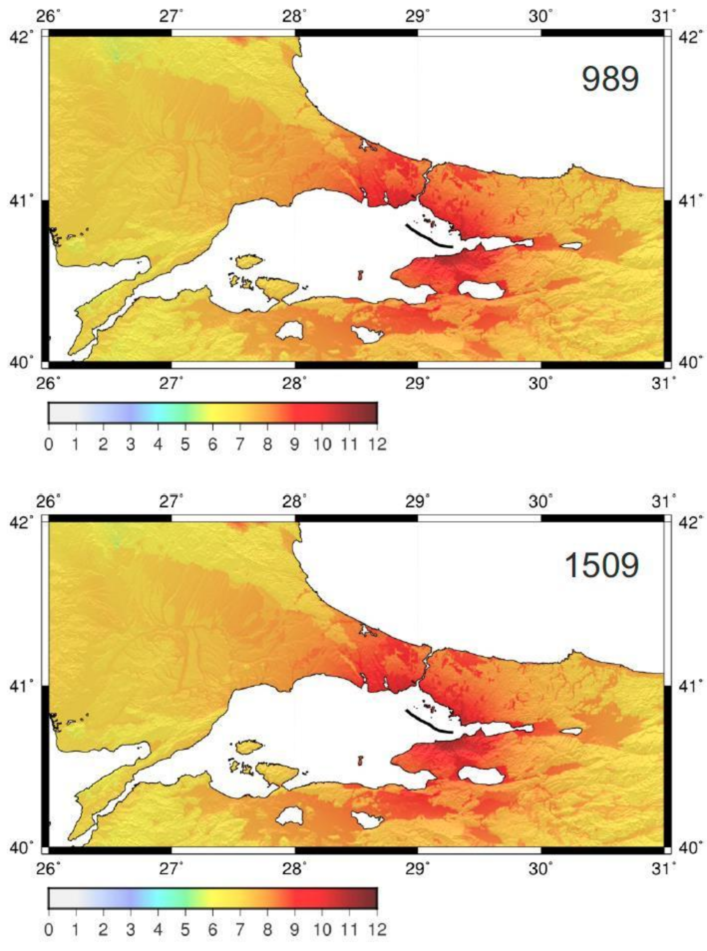

Figure 21: Historical intensity map scenarios of the Adalar Fault
(Segment B Armijo et al. 2002; 2005)

Figure 22: R/V Urania (left) and deployment of gravity core (right).

POTENTIAL IMPACT

Figure 23: Educational material brochure, poster, newsletter, leaflet

Figure 24 MARSite Project Result Meeting


Kandilli'den KORKUTAN UYARI!

Boğaziçi Üniversitesi Kandilli Rasathanesi Deprem Araştırma Enstitüsü'nden Prof. Nurcan Meral Özel, Adalar fayında enerji birikiminin son derece yüksek olduğunu belirterek, en çok 7 büyüklüğünde deprem üretecek enerji depolandığını açıkladı. Sayfa 16

42 ay Marmara'nın dibine baktılar 'iki fay var en fazla 7 olur' dediler

2 metrelik TSUNAMİ

7'lik deprem 2 metrelik TSUNAMİ!

Bölge karadan, uzaydan ve denizaltından en ince ayrıntısına kadar izlendi. Buna göre İstanbul Adalar fayı yakınında 7 büyüklüğünde deprem, sonrasında ise 2 metre boyunda tsunami dalgaları bekleniyor

'Marmara'daki deprem en fazla 7 büyüklüğünde'

MARMARA FAYININ RÖNTGENİ ÇEKİLDİ

100'ÜN ÜZERİNDE BİLİM İNSANI ÇALIŞTI

SON RAPOR

Kandilli'nin 42 ay süren Marmara depremi araştırmasının sonucu: Deprem en fazla yedi büyüklüğünde olacak. Adalar'da büyük enerji birikimi var. Tsunami dalgası 2 metreyi aşacak

İstanbul 7'yle sallanabilir

2 METRELİK DALGALAR

Figure 25:Examples of newspaper articles about the MARSite Project

Figure 26 News Broadcasts of MARSite Project Result Meeting

MARsite videos on project information, project results and borehole installation

http://marsite.eu/?p=1724

http://marsite.eu/?p=2265

http://marsite.eu/?p=2269

MARsite video of press coverage

1	***CNN Türk***	***Ana Haber***	http://ankara.interpress.com/tvarsiv2/2016/06/20/CNN_TURK/18480060.mp4
2	***Star Tv***	***Ana Haber***	http://ankara.interpress.com/tvarsiv2/2016/06/20/STAR_TV/18480100.mp4
3	***Beyaz Tv***	***Ana Haber***	http://m.beyaztv.com.tr/program/beyaz-ana-haber/?parts=true
4	***Haberturk***	***Akşam Raporu***	http://ankara.interpress.com/tvarsiv2/2016/06/20/BEYAZ_TV/18480780.mp4
5	***NTV***	***Ana Haber***	http://ankara.interpress.com/tvarsiv2/2016/06/20/NTV/18480402.mp4
6	***Kanal B***	***Ana Haber***	http://ankara.interpress.com/tvarsiv2/2016/06/20/KANAL_B/18481003.mp4
7	***A Haber***	***Akşam Ajansı***	http://ankara.interpress.com/tvarsiv2/2016/06/20/A_HABER/18480563.mp4
8	***Kanal 7***	***Ana Haber***	http://ankara.interpress.com/tvarsiv2/2016/06/20/KANAL_7/18480721.mp4
9	***TRT Haber***	***Haberler***	http://ankara.interpress.com/tvarsiv2/2016/06/20/TRT_HABER/18480316.mp4
10	***Bloomberg Ht***	***İlk Söz***	http://ankara.interpress.com/tvarsiv2/2016/06/21/BLOOMBERG_HT/18480895.mp4
11	***KANAL 24***	***MODERATÖR***	http://ankara.interpress.com/tvarsiv2/2016/06/20/KANAL_24/18479008.mp4
12	***HABERTURK***	***GÜN ORTASI***	http://ankara.interpress.com/tvarsiv2/2016/06/20/HABERTURK/18479110.mp4
13	***NTV***	***HABERLER***	http://ankara.interpress.com/tvarsiv2/2016/06/20/NTV/18479394.mp4
14	***HABERTURK***	***HABERTÜRK MANŞET***	http://ankara.interpress.com/tvarsiv2/2016/06/20/HABERTURK/18479434.mp4
15	***A HABER***	***AJANS GÜN ORTASI***	http://ankara.interpress.com/tvarsiv2/2016/06/20/A_HABER/18479431.mp4
16	***CNN TÜRK***	***GÜNLÜK***	http://ankara.interpress.com/tvarsiv2/2016/06/20/CNN_TURK/18479498.mp4
17	***NTV***	***HABERLER***	http://ankara.interpress.com/tvarsiv2/2016/06/20/NTV/18479537.mp4
18	***HABERTURK***	***AKŞAM RAPORU***	http://ankara.interpress.com/tvarsiv2/2016/06/20/HABERTURK/18480034.mp4
19	***KANAL 24***	***HABERLER***	http://ankara.interpress.com/tvarsiv2/2016/06/20/KANAL_24/18479973.mp4