



Bogazici University



Kandilli Observatory and Earthquake Research Institute
Department of Earthquake Engineering

26 Sept. 2019 (13:59)
Istanbul-Off Silivri Earthquake

Istanbul Earthquake Rapid Response System

**Preliminary Estimations for the Strong Ground Motion
Parameters and Building Damages**

STRONG GROUND MOTION

Magnitude : $M_L=5.7$

Epicenter : 40.8823 – 28.2095

Depth : 12.3 km

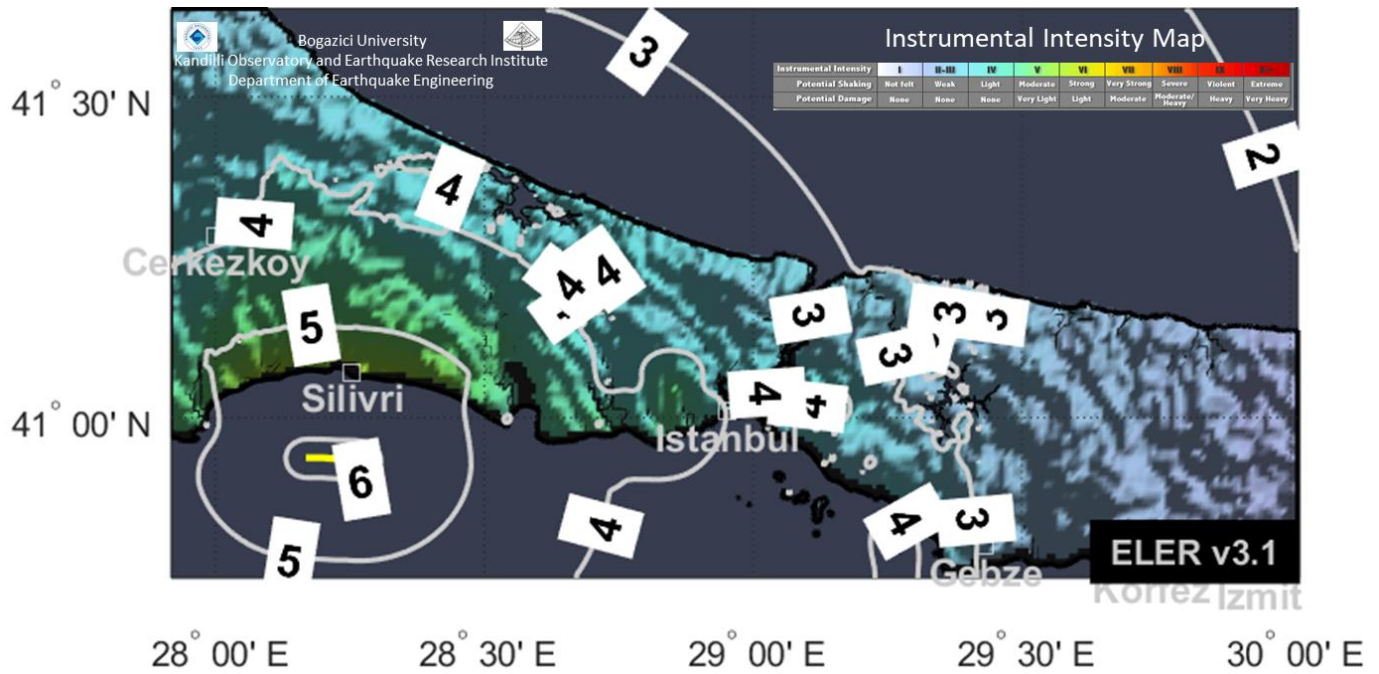


Figure 1. Instrumental Intensity Distribution

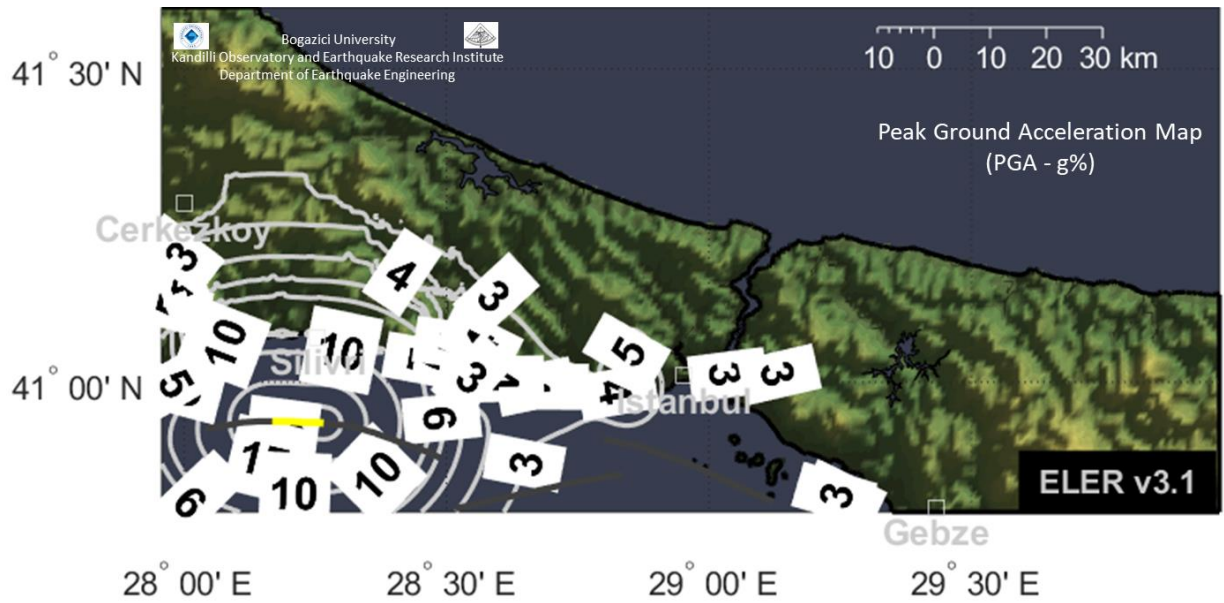


Figure 2. Peak Ground Acceleration (PGA – g%)

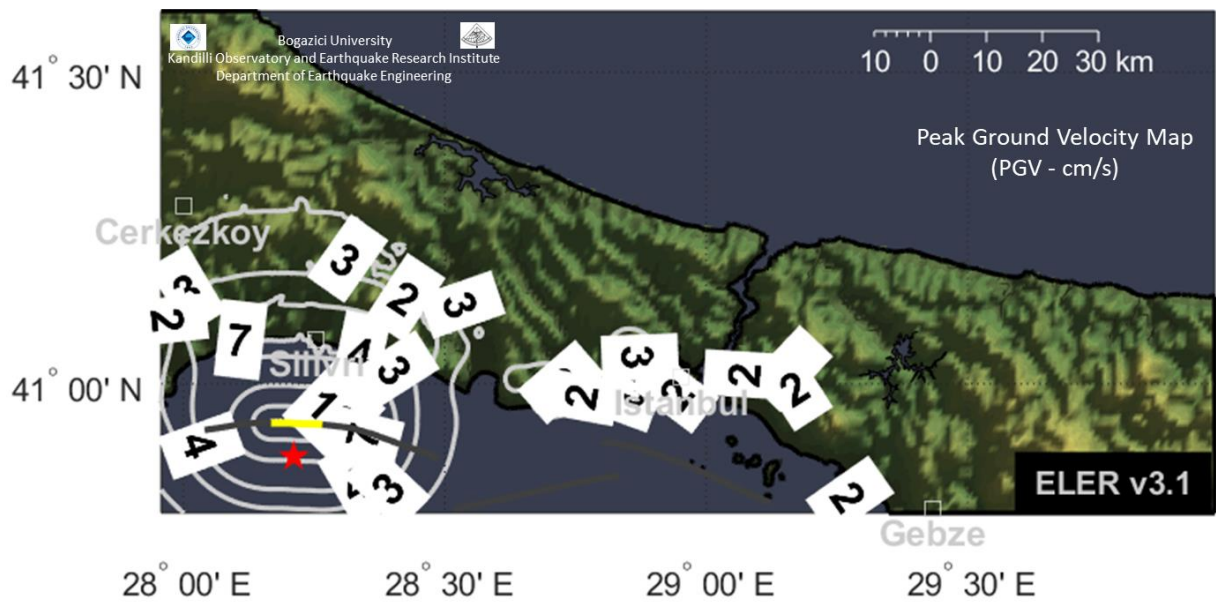


Figure 3. Peak Ground Velocity (PGV – cm/s)

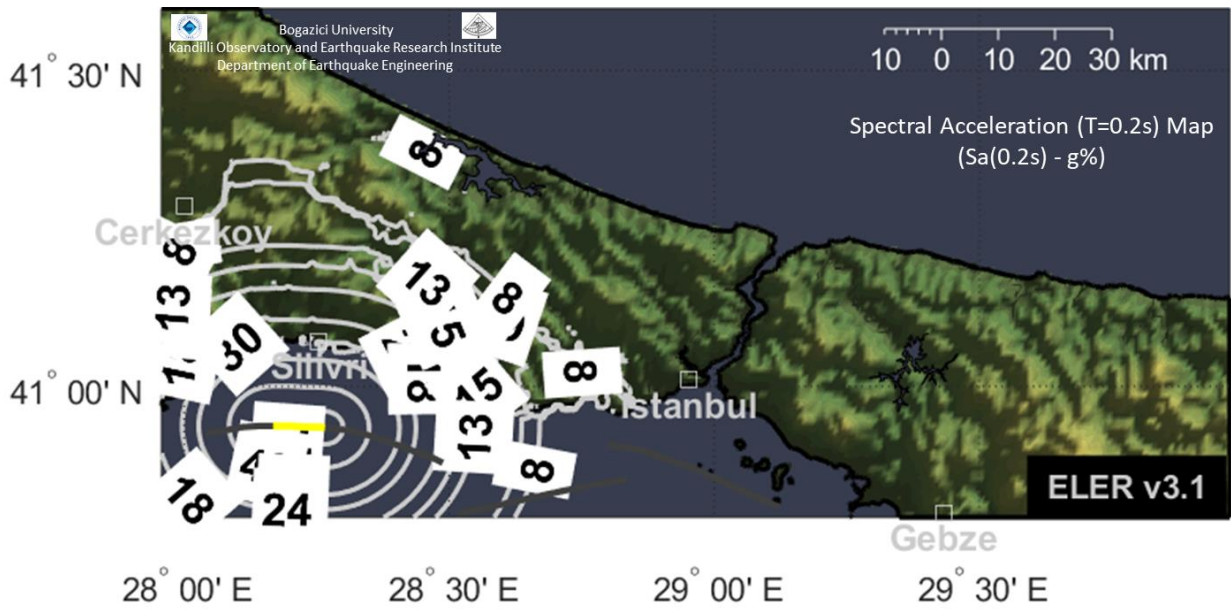


Figure 4. Spectral Acceleration @T=0.2 s ($Sa(0.2) - g\%$)

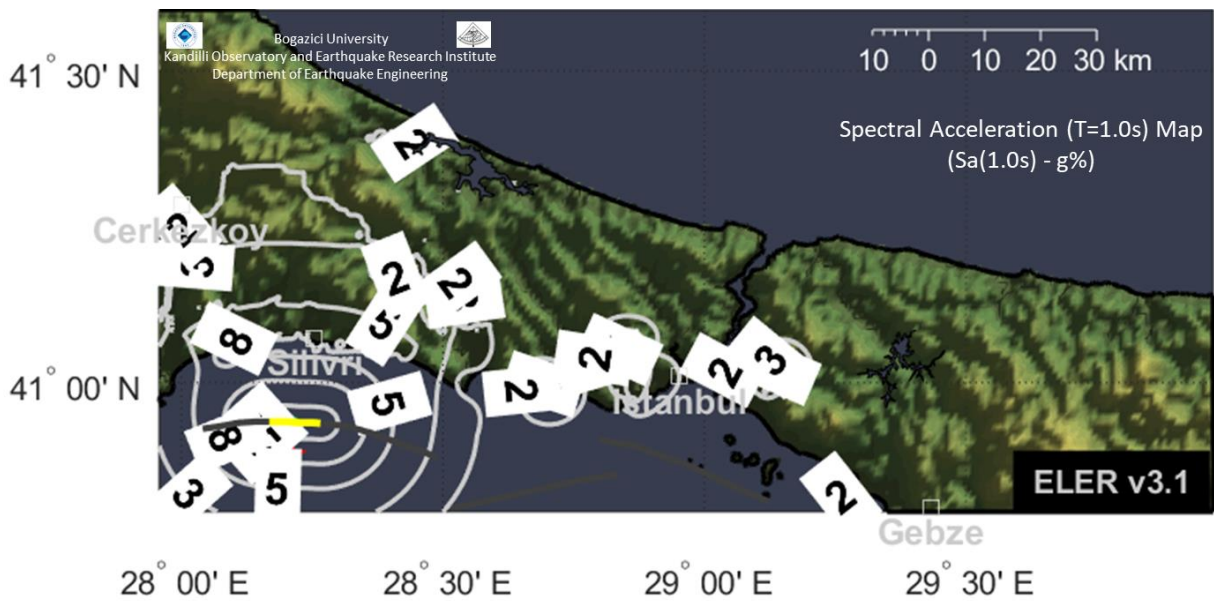


Figure 5. Spectral Acceleration @T=1.0 s ($Sa(1.0) - g\%$)

BUILDING DAMAGE ESTIMATIONS

Hafif Hasarlı Bina Sayısı Dağılımı Toplam: 5052

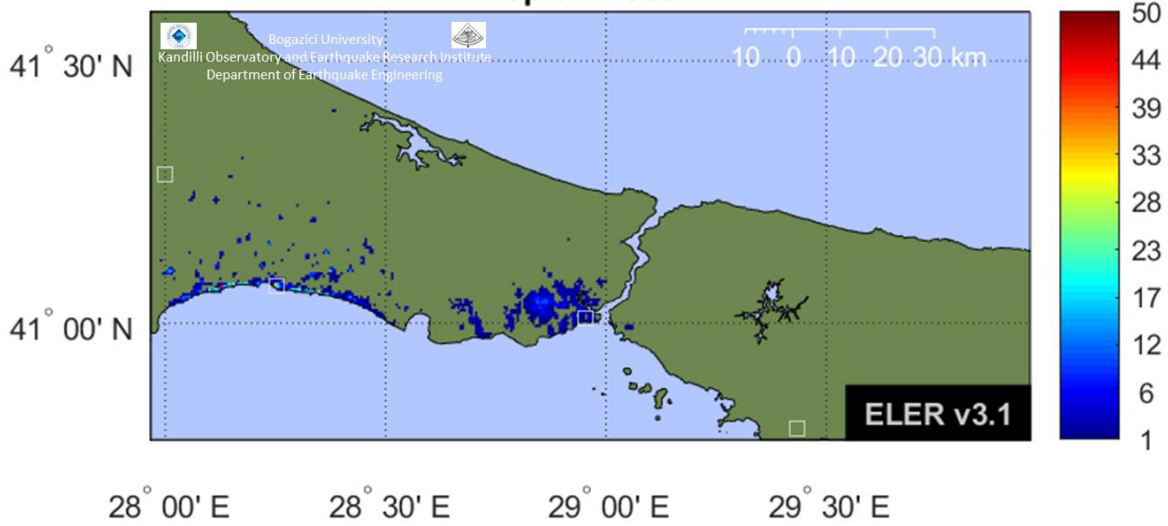


Figure 6. Distribution of number of slightly damaged buildings

Orta Hasarlı Bina Sayısı Dağılımı Toplam: 820

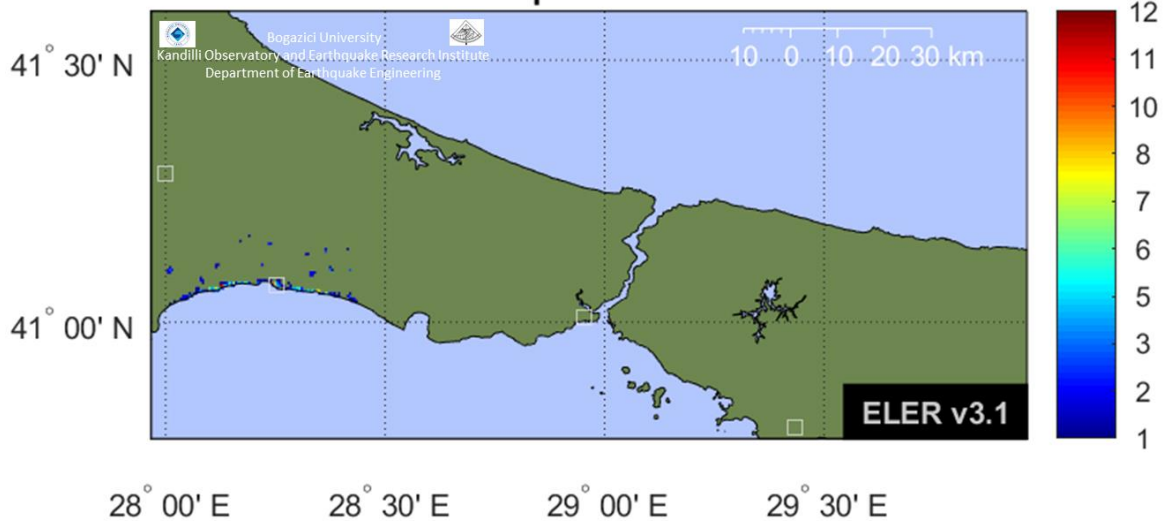


Figure 7. Distribution of number of moderately damaged buildings



Figure 8. Number of extensively damaged buildings

Note: Distribution of extensively damaged buildings is not shown over the grid-based map that is automatically generated after the earthquake because the estimated number is relatively small. In addition to Silivri, Büyükçekmece, Beylikdüzü, Küçükçekmece, Avcılar districts, it might be expected to have extensive damage to buildings constructed before the year 2000 across the city.