

## **The Anafartalar Thrust Fault and its Effect on Mega-Constructions (Çanakkale Strait, NW Turkey)**

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There is a thrust fault with right-lateral component on the Gelibolu Peninsula in the northwestern side of Turkey. This fault, which was named the Anafartalar Thrust Fault, developed in a transpressional regime related to the North Anatolian Fault. The Anafartalar Thrust Fault is a upper Pliocene-lower Pleistocene NE-SW-trending fault and caused Eocene units to overlie Miocene rocks in the region. Due to tilting of the Gelibolu Block, the formations located on the hanging wall of the Anafartalar Thrust Fault started to move onto the footwall in late Pliocene.

There is no information in the historical sources about earthquakes which occurred along the Anafartalar Thrust Fault. In addition, no seismic activity originating from this fault has been determined in the instrumental records until today. However, the thickness of the sediment package which is located in the southern side of the Anafartalar Thrust Fault is known but this package can not be observed in the northern side of the fault. Depending on the stratigraphic difference between two sides of the fault, there is an approximate accumulation of 2 km during 3.7 Ma in the region. By using the annual average uplift rates calculated from these values, five probable numerical models have been produced. These models were used to determine the amount of stress accumulation along the Anafartalar Thrust Fault and magnitude and impact area of an earthquake that may be occurred in the region. It was observed that the fault has the capacity to generate earthquakes between magnitudes of 2 and 4.1 as a result of five probable scenarios. In the light of the results and acceleration maps, the earthquake effects on mega-constructions which are being planned to build around Çanakkale Straits can be easily foreseen.