



Paleotsunami Investigations at the Kapıdağ Peninsula, Marmara Region-Turkey

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The Kapıdağ Peninsula, located on the southern margin of the Sea of Marmara, is one of the most active tectonic regions in Turkey. The region have been affected by many big historical earthquakes occurred in the Sea of Marmara. Some of these earthquakes are tsunamigenic; e.g. 123, 542, 543, 1265 and 1935. In order to evaluate possible tsunami risk along the coastal area of the Kapıdağ Peninsula, some candidate tsunami deposits have been interpreted from the trench. Some critical sediment samples in Holocene deposits have been recovered in the trenches of C-1, K-1 and K-2, which are 77, 41 and 34 m far from the modern coast, respectively. The sediment samples have been analyzed for elemental analysis, C/N ratio and OSL-dating. A combination of these proxies helped us to separate the tsunami candidate sediments as marine-origin (K-1 and K-2 where Ca, Ti and Mg values were higher) and marine/terrestrial (mixed) origin (C-1) deposits. Ca, Ti, Sr, Zr, Na and Mg concentrations have been defined as good indicators which may represent tsunami deposits. On the basis of OSL-dating, the tsunami candidate sediment samples of the trenches C-1, K-1 and K-2, have been associated with the earthquakes occurred on a) 26 October 740/25 October 989?, b) 22 May 1766/23 May 1829/17 September 1857 and c) 23 May 1829, respectively.