



2017 Kos-Bodrum Earthquake: On the Correlation of Long Period Ground Motion and Damage

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The Kos-Bodrum Earthquake of 21 July 2017 was the last in a series of seismic events that took place in 2017 along Turkey's Aegean Sea coast. It was a normal-mechanism earthquake associated with the east-west trending Gokova system causing limited damage in the Bodrum peninsula to the north and moderate damage in Kos island to the south. The main shock was recorded by the five-station Bodrum strong motion network operated by the Department of Earthquake Engineering. The main shock records are marked with a distinctive pulse type motion evident in time-domain plots, as well as in response spectra. Records from normal mechanism earthquakes in the near-field are quite rare. On the other hand, although the damage in Bodrum was generally limited, its distribution and damage patterns of individual structures suggest a correlation with the directionality of the event. In this work, we attempt to simulate the long-period strong motion due to the Kos-Bodrum earthquake in order to mark the spatial extent of areas where the long period ground motion was dominant. We try to explain damages to individual properties with simulated ground motion.