



The seismotectonic properties of the North Anatolian Fault in the Marmara Sea of Turkey

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We investigate the seismotectonics of the Marmara Sea region of Turkey by studying the seismic activity following $M_w=7.4$, August 17, 1999 İzmit earthquake. The seismic network that provides data for this study has been in operation since 2001. This network provides a high quality broad-band data with good azimuthal coverage for the evaluation of temporal and spatial progress of the seismicity and analysis of focal mechanisms. We analyze in detail several separate seismicity clusters associated with distinct segments of the North Anatolian Fault that poses seismic hazard for the metropolitan areas in the region. We obtain high precision locations using joint hypocentral determination, double difference and source mechanism solutions using the first motion and waveform modeling techniques. We present results from these analyses and discuss the seismotectonic implications on the continuation of the North Anatolian Fault System in to the Sea of Marmara.