



Relative tectonic activity assessment along the East Anatolian strike-slip fault, Eastern Turkey

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The East Anatolian transform fault is a morphologically distinct and seismically active left-lateral strike-slip fault that extends for ~ 500 km from Karlıova to the Maraş defining the boundary between the Anatolian Block and Syrian Foreland. Deformed landforms along the East Anatolian fault provide important insights into the nature of landscape development within an intra-continental strike-slip fault system. Geomorphic analysis of the East Anatolian fault using geomorphic indices including mountain front sinuosity, stream length-gradient index, drainage density, hypsometric integral, and the valley-width to valley height ratio helped differentiate the faulting into segments of differing degrees of the tectonic and geomorphic activity. Watershed maps for the East Anatolian fault showing the relative relief, incision, and maturity of basins along the fault zone help define segments of the higher seismic risk and help evaluate the regional seismic hazard. The results of the geomorphic indices show a high degree of activity, reveal each segment along the fault is active and represent a higher seismic hazard along the entire fault.