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# Seismic hazard assessment at central North Anatolian Fault (Turkey) combining GPS strain rates and b-values

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The North Anatolian Fault (NAF) represents seismically one of the most active transform zones on the Earth. It is characterized by high rates of crustal deformation generating destructive earthquakes. These rates are induced by convergence of northward migrating Arabian and African plates with respect to stable Eurasian plate. Therefore, it represents a natural earthquake laboratory with a wide variety of earthquake sizes (M7.9) to be investigated using interdisciplinary approaches (seismic, magnetic, geological, gravity, geodetic studies). In this study, we compared the results from the analysis of b-values from seismicity and strain rates from GPS (Global Positioning System) measurements to understand their coupling in terms of faulting and implications regarding earthquake hazard. In particular, this comparison allows investigating spatial correlation between b-value and strain rate maps and therefore locating fault segments with high potential to generate large earthquake(s). B-values range from 0.5 to 1.5 along the central NAF. The maximum principal strain rates are positive (tensile) and the minimum principal strain rates are negative (compressive). The surface strain is positive which shows that the tensile strain is predominant in high strain rates areas. This is consistent with that of the corresponding stresses. Our results indicate three potential locations that might generate large earthquake in future.