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PROBABILISTIC SEISMIC HAZARD ASSESSMENT OF THE CENTRAL SEGMENTS OF THE NORTH ANATOLIAN FAULT ZONE IN TURKEY

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The North Anatolian Fault Zone (NAF) extends along the Northern Turkey for more than 1500 kilometres and it is one of the most active fault systems in the world. During the last century, almost all of the NAF system was ruptured by large (Mw>6.5) earthquakes (1939 Erzincan, 1942 Erbaa-Niksar, 1943 Tosya, 1944 Bolu-Gerede, 1957 Abant, 1967 Mudurnu, 1999 Kocaeli and 1999 Düzce) providing the most valuable information on the segments that tend to produce large earthquakes (Barka, 1996). The scope of this study is to evaluate the seismic hazard potential of centre NAF segments (the rupture zones of 1942 Erbaa_Niksar and 1943 Tosya Earthquakes). To develop source characterization models, geometry of the fault segments (length, width, dip angle, and segmentation points) will be determined with the help of available fault maps and previous studies in the literature, linear fault segments will be defined considering multi-segment ruptures, and composite magnitude distribution model will be used to properly represent the characteristic behaviour of North Anatolian Fault. Next Generation Attenuation (NGA) ground motion models will be employed to represent the ground motion variability. Hazard maps of the region for rock site conditions will be prepared to allow the earthquake engineers perform site-specific hazard assessment for local site conditions and develop site-specific design spectrum for any site conditions.