



Geometry and Paleoseismology of Yedisu Seismic Gap, North Anatolian Fault Zone, Eastern Turkey

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Yedisu Fault is located between Erzincan and Yedisu Town (Bingöl), at the eastern part of the North Anatolian Fault Zone (NAFZ). It elongates with N60-80W orientation and has a length of 80 kilometers. Yedisu segment is one of the important seismic gaps, since, this segment remained unruptured after the 20th century earthquake sequence on the NAFZ. The 17 August 1949 Elmali earthquake and 13 March 1992 Erzincan earthquake occurred at the eastern and western neighboring faults respectively. According to the historical records, last earthquake on Yedisu segment occurred in 1784.

Yedisu Fault mapped at a scale of 1/25000, based on detailed field reconnaissances together with the interpretation of satellite images, digital elevation models and aerial photographs. Yedisu Fault segment is subdivided into western, center, and eastern part for descriptive purposes.

Two trenches were excavated at the western and eastern part of segment. The western site Sarıkaya is located 30 km east of Erzincan. A linear depression located on the N80E trending fault segment were dugged perpendicular to fault trace. Two paleoevents are exposed in the trench according to stratigraphic and structural interpretations. The eastern site Karapolat is located 10 km west of Yedisu. The trench is excavated perpendicular to the N70W trending segment characterized by juxtaposition

pressure ridge and 80 m offset river. Two paleoevents are also defined in Karapolat trench. Dating process of collected charcoal samples is still underway. Considering that there is no any documented historical earthquake on Yedisu seismic gap, two dated old earthquakes will give important information about the history of the Yedisu seismic gap.