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RELATIONS OF ACTIVE FAULTING TO GIGANTIC LANDSLIDES IN WEST CENTRAL ANATOLIA, TURKEY

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The Eskişehir Fault Zone is a significant ongoing intracontinental deformation realm extending from Bursa to the south of Tuzgölü in Anatolian Platelet and presents close relationship with km–sized landslides near the İnönü district, 40 km west of Eskişehir city. The investigated area were shaked by numerous earthquakes last and demolishing of which was occured in 1956 vith a magnitude of 6.4. Although the earthquakes occurred on Eskisehir Fault Zone can be regarded as moderate, these landslides provide good opportunities to investigate the complex relationship between mass failure, active faulting and intervening lithologies.

The investigated area having an average altitude values of 950 m comprises western part of the southern front range of Eskişehir graben that bounded by grossly E – W running active normal faults with a slight right–lateral strike-slip component on both sides. The total vertical offset of about 450 m on this southern segment is created by only one master fault. The footwall block chopped up by NW running pure strike-slip faults which were interpreted as the older inactive structures. One of them seems forming a natural boundary for the crowns of the footwall – drived landslides from the SW. From the view point of lithology, mass failure suffered front range comprises Mesozoic marbles and overlying basaltic lavas. The marbles are stiff, partly jointed and mostly form steep cliffs as fault scarp. In these parts, the slope angle exceeds over

50 degrees. Contrarily, the basaltic lavas are vesicular and heavily jointed all over and exhibit a considerably weathering. Due to the frequent mass failures towards the graben floor from the lava covered parts of footwall, the fault scarp is subdued and even indistinct.

On the footwall block two prominent and one diffuse landslides were distinguished. The distinct landslides are characterised by km–sized crowns, hummocky topography throughout the zone of removal and a steep debris flow fan developed on the footwall. The latter is 2 km in diameter and may include several meter–sized basalt blocks. Geomorphological observations prove that these fans were displaced by some synthetic faults as well. The indistinct landslides are mostly small scale (10's to several 100 m) were developed on gently sloping front ranges. This sort of landslide complex is characterized by an overall hummocky topography. It seems that these landslide events are catastrophic in nature and slightly ancient as evidenced by their faulted deposits and these landslides can be assessed as dormant position. For this reason, the future risk to be sourced from these landslides should be investigated depending on the fault activity.