

Neotectonic evidences on the activity of North Tehran & Niavaran faults

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The study area is situated between the latitudes of 35,29 and 35,50 N and longitudes of 51,15 and 51,42 E. Major part of the study area is within the Greater Tehran. The area is basically covered by the glacio-fluvial sediments of Quaternary. Mountain Front Sinuosity and Valley Floor Ratio Indexes indicate that the region is tectonically young, showing an activity of number of about one. Study of the landforms that contain alluvial fans and those associated with active faulting indicates that tectonic activity is translated from the North Tehran thrust front into the pediment front. The study also suggests existence of a sinistral strike-slip component superimposed on the predominant reverse component of the fault movements. The Daneshgahe-Shahid Beheshti fault set (Attitude: N50E,85NW) first developed as T or R fractures in a simple shear zone between the North Tehran thrust and Niavaran thrust. These fractures resulted from sinistral component of movement along the aforementioned faults. Continuation of deformation caused later dextral displacement of about 150-500m along the faults of the set and their anticlockwise rotation (about 4-5). Further block rotation moved these into the compressive zone of deformation during the latest stages of activity, and caused reverse dip-slip displacements of about 1m along the faults. The latest stages of activity along the faults occurred before deposition of the upper part of C formation. Because activity of this fault set is related to the movement along the North Tehran thrust it is therefore, suggests that the latest activities of the North Tehran thrust also occurred before deposition of the upper part of C formation.