عنوان مقاله:

Natural disasters like earthquake in range of Tabriz and its vulnerability, Case Study: North Tabriz Fault

محل انتشار:

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خلاصه مقاله:

The city of Tabriz in East Azerbaijan province has been experienced several historical destructive earthquakes. Previous researches using quantitative methods, geomorphologic phenomena and InSAR new technique indicate that the North Tabriz Fault is an active fault. In this study, we analyzed the data from National Seismic Center (1996-2017) in range of Tabriz and the surrounding area. In the intersection points of the faults, the clusters of micro-earthquakes have the highest concentration and their dominant activity trends are northwest-southeast and north-south. Besides, the least activities belong to the area in northwest of Bostanabad, and on the other hand the North Tabriz fault strike in its southeast part (around Hashtroud) has the least instrumental activity. Study of the historical earthquakes occurred in the region shows the most concentration in North Tabriz Fault trend (northwest-southeast). Furthermore, the least occurrences of the historical earthquakes belong to the southeast part of the North Tabriz fault system. On the other hand, study of the historical earthquakes reveals a 238-year seismic gap of strong ground motion (7.7) in the region. The activity of micro-earthquakes and the region as well as the seismic gap of the strong motion in Tabriz range could be a warning alarm for occurring a strong ground motion. Therefore, this study indicates that there is a risk of rupture in North Tabriz fault zone and suggests that construction activities should be avoided in the vicinity of the fault. However, with respect to the fact that North Tabriz Fault system passes through north of Tabriz, the rapid population growth, spatial development and constructions in the vicinity of the fault increase the vulnerability, loss of life and financial damages. Although North Tabriz fault is seemingly in seismic quiescence about instrumental strong motion, the accumulation of stress especially in the areas with historical seismicity and least instrumental seismicity shows a realistic seismic scenario with a magnitude between 7 and 7.5 in the fault strike and Tabriz range, that is a warning for intolerance of potential crises in range of Tabriz in the future. We should seriously be concerned about the areas located in the vicinity of the fault. Besides, the secondary hazards such as landslides are major environmental threat for these areas. It is suggested that the land use of mentioned areas to be changed or modified via an orderly schedule in near future in order for us to save the lives of people who are prone to the risk of fault rupture and to avoid ... th

کلمات کلیدی:

Earthquake, North Tabriz fault, Risk, Hazard, East Azerbaijan, Tabriz