

# PROBABILISTIC SEISMIC HAZARD ASSESSMENT FOR QUETTA AND SURROUNDING REGION

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## Abstract

The seismic hazard analysis for Quetta and surrounding area was carried out by using the probabilistic approach. The analysis considers seismicity occurring in the study area, tectonics and expected ground motion in terms of peak ground acceleration (PGA). The area is seismically very active and due to this disturbance cities of Quetta and Kalat were completely destroyed during the 1935 earthquake. To mitigate the consequences of future possible earthquakes, seismic hazard analysis for the area is carried out. On the basis of seismotectonics and geological features, seven seismic sources are recognized in this region and significant sources among them are established. Expected PGA with return periods of 50 and 100 years for the cities of Quetta, Chaman, Kalat and Ziarat are 0.27g, 0.16g, 0.21g, 0.26g and 0.29g, 0.20g, 0.25g, 0.27g respectively. Probabilistic PGA maps for 90% probability of non-exceedance in 50 and 100 years are also compiled.