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## The probability of a large earthquake in Tehran: Fact or faked

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Due to being on the Alpine-Himalayan orogeny belt, Iran has always been affected by the changing factors of the Earth's crust and is exposed to the most orogenic activities and earthquakes. In 2017, The Iranian Seismological Center (IRSC) recorded more than 16,000 earthquakes of which 235 earthquakes have been registered for more than 4.0 on the Richter scale. On December 20, 2017, a large earthquake of magnitude 5.2 has struck Iran's capital Tehran just five weeks after a major earthquake in Kermanshah province that killed at least 600 people. The Iranian Seismological Center assessed the hypocenter near Malard (Tehran province) at a depth of 15 km. The fault caused this incident called Mahdasht fault by a strike-slip mechanism, which is located along the west of the north Tehran fault and the east of Eshtehard and Ipak faults. Subsequently, earthquakes of magnitude 4.6, 3.6 and 4.3 occurred in Firuzkuh, Pakdasht and Eyvanki respectively, which could indicate the seismicity of east and south east of Tehran. After this time, earthquakes of magnitude 2 to 3.5 were recorded in Eshtehard and south of Karaj. These evidences can indicate the continued seismicity and the seriousness of the risk and risk of an earthquake in Tehran metropolis. The south fault of Tehran, or the ray fault, which has a magnitude of 7 to 7.6, Mosha-Fasham fault with a magnitude of 7 and north Tehran fault are among the most dangerous faults in Tehran though they have not released energy for many years. The data show that in a circle in the center of Tehran with a radius of 100 kilometers, an earthquake of magnitude 7 occurs in every 158 years. The largest earthquake in Tehran occurred during the past 188 years and was 7.2 magnitudes, so it seems the earth's energy is gathering in faults and the next earthquake is likely to be more intense.

## Biography

Pedram Rafiee has his PhD in Geology/Biostratigraphy. His major field is related to petroleum geology, well site geology, biostratigraphy and sedimentology. He is currently working at Dana Energy Company as Chief Geologist and has worked at this company for approximately 7 years.

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