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T2.3-P11. Induced seismicity properties as a tool to discriminate natural earthquakes from other types

Induced seismicity is earthquake activity resulting from human activity that causes a rate of energy release, or seismicity, which would be expected beyond the normal level of background seismic activity. Although researches are still being carried out on the detailed causes of induced seismicity, there are many different applications associated with induced seismic activity. In addition to the subsurface stresses, fluid pressures play a key role in causing seismicity. The imbalance of natural in situ earth stresses will cause an occasional earthquake. Reservoir induced seismicity, hydro fracturing, gas injections and mining are some most familiar of manmade earthquakes while explosions are another type of these events. Discrimination of natural and induced earthquakes is not so simple. Here some cases of reservoir induced earthquakes are studied based on private networks and properties of them are listed. Occurring under dam lakes, very low depths, close relation and dependence on water level of the lake, happening like as tremors with high rate and small magnitude, oscillating with water level changes and affecting seismicity parameters of the area are some properties which give the ability of discriminating these kinds of events from natural tectonic events.

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