

T1.2-P05. Determination the regional principal stress directions along of the Gulf of Suez, Egypt.

Seismicity along the Gulf of Suez was studied, using an earthquake from Egyptian National Seismic Network (ENSN) catalog from 7079 events that occurred between January 1997 and May 2010. The earthquakes are mainly concentrated in four zones; the first zone is located between latitude 27 – 27.5 and longitude 34 – 34.5 degrees in the southern entrance of the Gulf. The second zone is located between 27.5 – 28 and longitude 33.5 – 34 degrees; the third zone is located between latitude 28 – 28.5 and longitude 33 – 33.5 degrees, the fourth zone is located in the end of the gulf between latitude 29 – 29.9 and longitude 32.3 – 32.8 degrees. The orientations of fault planes and slip directions indicated by a population of earthquake focal mechanisms used to determine best fit regional principal stress directions and $R = (S_2 - S_1) / (S_3 - S_1)$, a measure of relative magnitudes. The technique has been applied to 20 events from the gulf of Suez earthquake sequence for which we have found best fit stresses (plunge and azimuth): $S_1 = 03, 337$ $S_2 = 0, 67$ $S_3 = 87, 159$ and $R = 0.9$. The average misfit between the stress model and all the data is about 7.6° .

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