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Moon-Earth gravitational variation force connection with earthquakes near Oceans

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Abstract

In this paper, we investigated the possible interactions of the moon and Earth, mainly in the period 1996-2016. Initially, we considered the gravitational force of Moon vs. Earth by Newton's equation. The Moon has an elliptical orbit around the planet that reaches two points of maximum. One is the closest, the Perigee, and other the farthest is the Apogee. The Apogee and Perigee have distinct values monthly. We calculated the perigee force variation during the period, for every month to all years. This result creates an oscillation, which in, 13 – 14 months, completes a whole cycle. The wave period is 5400 hours as calculated. The energy generated by Moon on Earth from this closest position reaches a maximum during the Full or New Moon. An unusual result found in November 2016 when the Perigee force reached the highest magnitude of all period. We observed during these phases; there is an enhancement of earthquakes near the shorelines of the Pacific. On the other hand, the perigee minimum matches with the First or Third Quarter, but in this case, the effects on seismological events are smaller than the ones observed for New or Full Moon. The outcomes indicated that external forces created by Moon- Earth system allied with ones beneath the earth's surface are responsible for increase earthquakes in the pointed out areas. Also, the oscillating movement of Moon-Earth system provides a tool for predicting the next enhancement on earthquakes cycles.

Keywords: gravitational force, earthquake

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