The genes and seismicity genetics of the NAF: conflicts of historical earthquake theses

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1 Abstract

The historical earthquake (EQ) theses are tested by the use of electromagnetically equivalent modelling of earthquake mechanism [1]-[2] in this paper. The approach is applied to the earthquakes in North Anatolian Fault zone.

Let us accept for a while that the earthquakes at specific locations repeat themselves with specific frequencies as the several historical earthquake theses say. In this case, the repeating periods should be related to the travel time and roundtrip periods of the Earth around itself and the Sun. Beside there must be a linear relationship among them depending on the temporal displacement coordinate; however, a meaningful relationship explaining these repetitions could not be given from the processing of data generated from the earthquake characteristics, analytically. The period in earthquake repetitions of these specific locations comes from the periodic structure at the cavity and waveguide structures [3] in the all parts of the Earth and the period of EQ explorer [2], beside the propagation velocity of EQ explorer wave and the spatial displacement between the EQ zone and the inner core. The EQ explorer pulses travel toward inner core and return sometimes toward EQ zone as amplified and/or attenuated. The repeating frequency of an EQ at the same or near location in a fault system is related to these non-linear propagation phenomena. Due to this non-linearity the sequential repetitions of a historical earthquake can never generate the same period in the coordinate system of temporal displacement. Why? The reason is related on the time decomposition of electromagnetic wave propagating in plasma environment [2], [4]. This decomposition generates the electromagnetic time contraction and spatial strain. So, both of

the temporal and spatial coordinates change non-linearly; therefore, inversions are ill posed and they may give multi-valued solutions. The approximate coincidences for historical repetitions are occurrences depending on chances, only. These approaches of historical repetitions may give approximately true results sometimes because there exist analytical relationships among year/day scales and the Earth's radii and the radii of Earth's travel path around the sun.

The electrodynamics of 3-12 GHz wave propagating through the ionosphere stimulates the atmospheric variations along the guiding structures involving the ionosphere plasma. These phenomena generate the thresholds through the atmosphere triggering meteorological and/or climatic variations both far away and around the activity zone. These effects cause specific alterations generating temporal and spatial displacements on historically expected seismic activities. These constrain and/or remove the earthquake [5]. The result is some specific conflictions on the historical earthquake approaches.

The data [2], [4] collected from 1999 to nowadays in North Anatolian Fault system according to the above mentioned electromagnetically equivalent modelling of earthquake mechanism [1]-[2] are processed with the approach of genetic algorithms by using the earthquake prediction genetics [5]. Similar algorithm was applied to the ordinary seismic data. The results of both methods are compared. The results observed from ordinary seismic data did not give genes having meaningful and single valued characteristics for the historical repetitions of the earthquake about the historical period. The results observed from the method presented in this paper fit with the facts related on the periodical non-linearity explained in above paragraph.

2   References

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