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## The Conditional Contributions of Electromagnetism and QED To Natural Hazards in Both Nano and Macro Cosmic Scales

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The Earth itself with its inwards and outwards is a unique and complete system according to all events effecting the Earth<sup>1</sup>. All the natural events involving hazards are the results of self-controlling mechanism of the complex network of this unique system. Several contributions and reports presented this fact. The classical approaches trying to explain earthquake events, say EQs, and related phenomena may be taken as approximations working for the EQs less than 5.9 Richter in magnitude according to observations coming from the application of this approach. The EQs bigger than 5.9 Richter involve very different ingredients given with dynamics based on the gravity in classical geophysics<sup>1</sup>. The ranges of  $(5.9+n, 5.9+n+1)$  for every  $n=1, 2, 3, \dots$  present different formulations due to validity of the approximations and orders of the variables as relative to the energy density and frequency levels. The fact in here comes with the compactness coming with the electromagnetically equivalent models<sup>1</sup>.

The planetary movements effect both the mechanics and dynamics of tectonic plates like tidal action of Pascal's law modified with stochastic interactions. The Earth's plates may move and collide with each other due to the forces generated by these displacements. The Primary wave comes from these mechanics of plates under planetary effects, tidal effects, and/or effects of extended Pascal's and Archimedes' principles for compressible liquids involving non-adiabatic gasses in semi-open containers. All these effects are effective in vertical direction, totally. P wave is a result of these forces generated by the dynamics of collision of plate-to-plate, plate-to-sea, plate-to-ocean, and/or plate-to-tidal processes coming from planetary motions and acts between plates. Secondary wave come from the effects of Casimir-Polder forces and Van der Waals potentials generated by the nano-displacements occurring among touch-to-touch phases of plates just at the end of P wave phases. These QED effects are effective in horizontal direction in total iff they can generate an EQ. If the plates touch to each other with the effect of forces coming from P wave then this induces Van der Waals potentials and forces like Casimir-Polder force work on the plates generating big amount of energy then big EQs can come to truth. It is possible to model the P wave phases with the deterministic ingredients and processes; however, modelling the S wave phases are not possible without stochastic ingredients and processes. The processes like storms, typhoon, etc. developing with the atmospheric events generate the similar effects. The waves

coming with EQs propagate in inflective trajectories; therefore, these waves propagate in inflective spaces. This analysis illustrates the gravity interactions of the Earth with other planets generating electromagnetic interactions in both nano-scale and quantum level in Earth's interior as the actual trigger of EQs. The excessive fall works like the insurance for EQs preventing the occurrence of significant EQs and so, reducing the huge damage arriving from significant and/or bigger EQs.

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<sup>1</sup>Sengor T, "The Globally Compact Multi-Network of the Earth: the self-controlling mechanisms in natural hazards above significant level," Geophysical Research Abstracts, Vol. 21, EGU2019-17127,2019, General Assembly 2019.