THE IONOSPHERIC DISTURBANCES OBSERVED PRIOR TO SUMATRA TSUNAMI AND THEIR POSSIBLE ASSOCIATION WITH PRE-TSUNAMI ACTIVITY

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In this work, we present computational simulation of possible excitation of disturbances near Earth's surface and in the atmosphere/ionosphere caused by tiny rock deformation in the lithosphere prior to an earthquake/tsunami. In first step, the study pursues an excitation of acoustic wave in the lithosphere caused by rock deformation, its propagation in solid Earth up-to Earth's surface and deposition of momentum and energy at the Earth's surface. In second step, excitation of neutral waves such as acoustic gravity waves (AGWs) caused by deposition of momentum/energy and their propagation in the atmosphere is studied using thermo-hydro-viscous fluid simulation. In third and final step, AGWs interaction with ionosphere is studied using thermo-hydro-magnetic fluid simulation.