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Lithosphere-Atmosphere-Ionosphere Coupling

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Electromagnetic phenomena preceding large earthquakes have been reported in various frequency ranges and they are considered as candidates for the short-term precursor. ULF electromagnetic phenomena and Ionospheric anomalous changes such as GPS-TEC (Total Electron Content) are one of the most promising phenomena and they are the possible indices to monitor/forecast future crustal activities. Therefore, ULF geoelectromagnetic activities and Ionospheric changes associated with large earthquakes in Asia in this study. So far, empirical detectable distance of earthquake-related ULF anomalies is about 60 km for M6 and 100 km for M7 earthquake, respectively. For TEC anomaly, significant decreases have been reported for M>5 Taiwan earthquakes. The purpose of this study is to evaluate the reported results in Indonesia and Taiwan based on observation because they are one of the most seismically active regions in the world. We believe that our results also provide a new knowledge to upper atmosphere physics in the point view of "Lithosphere-Atmosphere-Ionosphere Coupling".