# Seismo-ionospheric precursor monitoring system based on near-real-time spaceborne and ground GPS observation

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Recently, the global ionosphere map (GIM) has been used to study the seismo-ionospheric precursors (SIPs) intensively. In order to shorten the data latency, an SIP monitoring system is built up based on the near-real-time GIM processing. The GIM data is derived from the combination of the ground-based and spaceborne total electron content (TEC) observation by means of the spherical harmonic function, where the data is retrieved from a global GPS observational network and the FORMOSAT-3/COSMIC radio-occultation (RO) experiments. The temporal statistical analysis is developed to detect the SIPs at several important metropolitans such as Tokyo. Some new finding and results are to be further discussed. The spatial analysis will be introduced to finding the repeat, duration and distribution of worldwide SIPs to estimate the possibility of forthcoming large earthquakes in the future.

Keywords: global ionosphere map, seismo-ionospheric precursor, total electron content