Seismo-ionospheric precursors observed by Advanced Ionospheric Probe onboard FORMOSAT-5

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FORMOSAT-5 launched on 24 August 2017 with a sun-synchronous orbit at 720 km altitude and 98.28 inclination, which passes at almost the same local time everywhere in the daytime of about 1030 LT and the nighttime of about 2230 LT. AIP (advanced ionospheric probe) on board FORMOSAT-5 has been observing the ion density, ion temperature, ion velocity, and electron temperature in nighttime, since 1 November 2017. FORMOSAT-5/AIP ion density and the global ionospheric map (GIM) of the total electron content (TEC) derived by ground-based GPS receivers are used to find ionospheric anomalies before the 11 November 2017 M7.3 Iran-Iraq Border Earthquake. It is found that in the epicenter area, FORMOSAT-5/AIP ion density and the GIM TEC significantly increase 7 - 9 days before the earthquake. Moreover, the increases in the ion density and the TEC imply that a eastward electric field generated during the preparation earthquake period is essential.

Keywords: FORMOSAT-5, Advanced Ionospheric Probe

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