Ionospheric electron density anomaly prior to the May 12, 2008 Mw7.9 Wenchuan Earthquake observed by FORMOSAT-3/COSMIC

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The seismo-ionospheric precursor before an Mw7.9 earthquake near Wenchuan (31.0^{o}N, 103.4^{o}E), China on 12 May 2008 is observed by FORMOSAT-3/COSMIC (F3/C) satellite constellation. By binning the F3/C radio occultation observation, three-dimensional ionospheric structure can be obtained to monitor the ionospheric electron density variation prior to the earthquake. This paper presents that surrounding the epicenter the F2-peak height, hmF2, descends about 15 km and the F2-peak electron density, NmF2, decreases more than 2 TECu between 250 and 300 km altitude around the noon-hour 5 days prior to the earthquake.