Maximum initial tsunami height estimation 10 min after large earthquake using initial total electron content pulse observation

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Ionospheric plasma disturbances after a large tsunami can be detected by measurement of the total electron content (TEC) between a Global Positioning System (GPS) satellite and its ground-based receivers. Nine minutes after initial sea surface enhancement in tsunami, TEC pulse enhancement equatorialward from the tsunami source area clearly appeared. In this study, we show the relationship between the TEC change and the initial tsunami height, which implies that the detection of the initial TEC pulse might contribute to tentative information of initial tsunami height.

Keywords: Ionospheric disturbance, Total electron content, Tsunami

