

## **Tracking the Tsunami Source From the Ionosphere After the Tohoku Earthquake of 11 March 2011**

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The global positioning system (GPS) can be used to monitor the tsunami-related perturbations in the ionosphere after the off Tohoku M9 earthquake on March 11, 2011, by measuring the changes of the total electron content (TEC). We estimate the vertical and horizontal mean speeds of the tsunami waves using the time and distance of the TEC perturbation, and then, taking into account the determined speeds, trace back to the origin point by applying a 3-dimensional spherical model. The estimated origin point is quite close to the tsunami source area, which reveals the ionosphere response to the tsunami. Further discussion of the correlations observed with other parameters will be presented.