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Ionosphere disturbances observed by the Hokkaido HF radar after the 2011 Off the Pacific Coast of Tohoku Earthquake

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Ionospheric responses to the 2011 Off the Pacific Coast of Tohoku Earthquake are studied using the SuperDARN Hokkaido radar, which is located at (43.5 N, 143.6 E) in geographic coordinates and monitoring the ionosphere over the wide horizontal area. The radar observed oscillation of the vertical motion of the ionosphere with the period of a few minutes. The disturbance propagated northward, away from the epicenter with the velocity of about 3.5 to 4.5 km/s. This value is consistent with the propagation of the earth's surface waves reported in several previous studies.

Keywords: SuperDARN, Hokkaido HF radar, 2011 Off the Pacific Coast of Tohoku Earthquake, ionospheric disturbance, Rayleigh waves, acoustic waves