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## Ionospheric wave like perturbations related to Rayleigh surface waves measured by GPS

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The ionospheric response to earthquakes has been reported in the literature for many years. Since energetic coupling from the lithosphere via the atmosphere to the thermosphere/ionosphere is realized by acoustic waves, it is assumed that long-period Rayleigh surface waves can generate characteristic ionospheric signatures. By using the dense networks of GPS receivers in North America and Japan, relative TEC data from differential phases have been analyzed to detect signatures related to selected earthquakes of magnitude larger than 6. Earthquake related wave-like structures have been found after the earthquake on November 3, 2002 in Alaska, during the California earthquake on December 22, 2003, and after the Hokkaido earthquake on September 25, 2003. Detection techniques and wave propagation features and are discussed.