

Local group velocity of ionospheric waves induced by earthquakes.

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The dense GPS networks developed for geodetic applications appear to be very efficient ionospheric sensors because of interaction between plasma and electromagnetic waves. The dual frequency receivers provide data from which the Slant Total Electron Content (STEC) can be easily extracted. Therefore GPS receivers are used to observe the ionospheric perturbations induced by geophysical events like earthquakes. Indeed, earthquakes generate ground waves but also acoustic waves that perturb the plasma layer surrounding the Earth. This monitoring can reach high time and space resolution above dense GPS networks. We propose to present several observations in order to characterize the ionospheric post-seismic perturbations. We distinguish two sources, one at near field, over the epicentre, and another one, at middle and far field due to Rayleigh waves propagation. We propose to focus this presentation on near field perturbations and to detail the method used to assess their characteristics of propagation. Then, the local group velocity of the ionospheric perturbations is interpreted in terms of infrasonic waves in the atmosphere. Finally we discuss the usefulness of these data for retrieving seismological parameters related to earthquake source mechanism.