



<http://ganymede.ipgp.jussieu.fr/spectre> : Continuous 2D monitoring of the ionosphere by GPS data, 3D tomographic developments, database evaluation and applications.

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The SPECTRE service (Service and Products for Electron Content and Troposphere refractivity over Europe from GPS data) is a result of a 4 years joint effort of IPGP research institution and Noveltis Company. The post-processed GPS data, the final ionospheric products and some data extraction tools are freely available to the scientific community through our web site. An evaluation of the 2D products database is presented by comparison with one hour sampling JPL and CODE products. The model parametrization, the inversion method and the resolution of 3D ionospheric tomography are presented and discussed. Then, some scientific applications taking advantage of the high time resolution of SPECTRE products are described. Some examples of ionospheric perturbations associated to acoustic and gravity waves created by earthquakes and tsunamis are presented and discussed. Both high and low frequency variations of the electronic density are related to the space weather activity. Finally, the inclusion of additional data, such as GPS-LEO occultations or radar ionospheric sounding, in our 3D tomography code is discussed as future improvements of the ionosphere monitoring.