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Investigation of the structure of the solar terminator in the ionosphere using the GPS technique and ionosonde observations

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By analysing the movement of the solar terminator one can monitor the gravity-acoustic waves generated in the neighbourhood of that phenomenon.
The clearly determined time and space dependence of appearance of the solar terminator movement phenomenon helps to select the GPS and the ionosonde observations appropriate for analysis.
Assuming that the GPS signal on its way from the satellite to the station crossing the terminator at point C (defined as the point of intersection of the line of sight with the edge of the shadow cone), the satellite movement generates the movement of point C on the terminator surface.
The magnitude of energy delivered to or dissipated from the analysed area depends on the local concentration of electrons, which depends on the height above the Earth surface.
The analysis of the ionosonde observations, such as the electron concentration and height profile together and the TEC observations obtained for the GPS stations, located exactly in the same place can give spatial information about the structure of the solar terminator and Ne behaviour when the ionization changes according to the solar zenith angle.
Some additional information can enable analyses to be carried out during chosen space weather conditions.
More precise knowledge about the structure of the solar terminator can be helpful in future for forecasting of the TEC behaviour.