

## Research project of the trouble of radio propagation in the ionosphere

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It has been required the detailed and on-time information about the ionospheric perturbations for advanced satellite utilities, e.g., electric navigation and electric survey. We launched a project as a science plan between 2006 and 2010 to research the trouble of radio propagation in the ionosphere for satisfy these requirements.

There are still many questions in the mechanism of ionospheric disturbances. They become difficult to forecast ionospheric conditions

precisely and we need to build an early-warning system of ionospheric disturbances by watching upstream source regions in accordance with the

fundamental research of ionospheric disturbance mechanisms.

From the point of view we chose the following three topics as main bodies of the project.

(1) Emphasized observation of equatorial ionosphere with ionosonde, GPS scintillation monitors, magnetometers, optical measurements.

(2) trans-equatorial propagations for deducing the location and drift velocity of ionospheric disturbances.

(3) Establish of standard quiet ionospheric model with GPS-TEC.

We will present a first trial of the measurements in this talk.