

GPS APPLICATIONS FOR RADIOCOMMUNICATIONS

ABSTRACT

The Global Position System (GPS) is a powerful tool to study the ionosphere, is easy to access, works all the time and all around the world. We worked with GPS global ionosphere maps, that were previously processed by the Center for Orbit Determination in Europe, in the University of Bern (Switzerland) in IONEX format and coefficients (spherical harmonic expansion) every two hours to do a prediction of the global Total Electron Content. It was used the Maximum Entropy Method (MEM) with 30 days data base to compute the TEC for the next 6 days. With this prediction it was possible to determinate some important parameters for radiocommunications, specially in the range of HF, VHF, UHF e SHF. With our program it is possible to obtain the total electron content for all the world for specific time, the excess delay time for one frequency, and the critical frequency for the F2 layer. It is presented one example of prediction for optimum working frequency.