The nighttime electron density enhancement of the Earth’s ionosphere is characterized by the greater electron density in the nighttime than that in the daytime. Recently, this anomaly feature has intensely been studied by using satellite observations and model simulations. Results show that there are three obvious nighttime electron density enhancement regions around South American, European, and Northeast Asian. The 3D tomography method, employs GPS data observed by an network of dual-frequency GPS receivers, is used in this study to study the three-dimensional structure of the nighttime electron density enhancement around European region, where covers a lot of GPS receivers. Furthermore, we compare with the tomography results and the SAMI2 (Sami2 is Another Model of the Ionosphere) model simulation results. The results will be shown in the poster.

Keywords: 3D tomography, nighttime electron density enhancement, GPS-TEC