

#29 Received 01/09/2015

Huang, Chaosong  
U.S. Air Force Research Laboratory

### **Modelling the zonal drift of equatorial plasma irregularities and scintillation**

Abstract:

Equatorial plasma bubbles are the most significant disturbances in the nighttime low-latitude ionosphere and cause radio scintillation. The zonal drift determines the location of plasma bubbles after they are generated and is the key factor for accurately predicting where scintillation will occur at a later time. We have created a new model of the zonal drift of plasma bubbles and irregularities on the basis of measurements of Jicamarca radar, C/NOFS, and SCINDA. The model provides the local time distribution of the zonal drift when the input parameters (solar radio flux, day of year, longitude, and latitude) are given. We have compared the model output with SCINDA data and found a good agreement with the observations.