

# **An Investigation of Ionospheric Irregularities Associated with High Rate of Change of Total Electron Content during the maximum solar cycle-24 in Uganda**

**Oron Sulayi**

**s.oron@muni.ac.ug**

**Department of Physical Sciences, Muni University-ARUA, Uganda**

## **Abstract**

The performance of Global Navigation Satellite Systems (GNSS) is highly affected by small scale ionospheric irregularities. The ionospheric irregularities in the path of high frequency signals cause the intensity of the signal to significantly reduce and the signal in extreme cases may fade out. The study will focus on the possible structural dynamics of the irregularities with in the Uganda region. Four GPS data sets that is; Kampala, Mbarara, Entebbe and Kasese will be used. The rate of change of TEC will be computed and from graphical analysis, the most perturbed time will be identified and investigated. The diurnal and seasonal effects of the irregularities on GNSS signals will be investigated as well.