

SESSION: Space Physics

MARS Themes:

Title:

Analysis of ionospheric storm effects based on GPS and ionosonde data during geomagnetic storms

Author(s): add rows below if more authors

Masango, N^[1]

Habarulema J.B. ^[1,2]

Matamba T.M. ^[1]

Affiliation: add rows below for more affiliations

1. SANSA Space Science, Hermanus

2. Rhodes University, Makhanda

Abstract:

Total Electron Content (TEC) is a key parameter that explains the impact of the ionized atmosphere on the propagation of the radio waves. Major space weather events may contribute to ionospheric delay on the radio signals where additional noise is introduced into measurements of the satellite signal. The quality of the received signals may be severely degraded. This will compromise the accuracy and reliability of the Global Positioning System (GPS) usage. This study focuses on determining the ionospheric storm effects during geomagnetic storm periods. Using GPS TEC and ionosonde TEC over Grahamstown stations. Geomagnetic storm period selection is based on storm-time criteria of $Dst \leq -30$ nT or where $Kp > 4$.

Format:

Oral presentation

Keywords: (add ; between keywords)

Space Physics; Space weather; Global Positioning System