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Midlatitude post sunset plasma bubbles during 11 April 2001 intense storm

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First observation of plasma bubbles over the European middle latitudes during an intense storm of 11 April 2001. The plasma bubbles are observed in Global Navigation Satellite System (GNSS) total electron content (TEC) measurements during the interplanetary magnetic field (IMF) Bz southward turning and confirmed with in-situ plasma density measurements from the Defense Meteorological Satellite Program (DMSP) satellites. The results show that the plasma bubbles originate from the equatorial ionospheric anomaly region and migrate poleward at virtual speeds of 400 m/s. During the time of occurrence of the plasma bubbles, TEC and ionosonde F2-region peak density measurements were enhanced compared to the 5 quietest days of the month. Evidence from ionosonde F2-region height measurements indicate an upward plasma motion while the interplanetary electric field (IEF) Ey was enhanced. This was found to suggest that the possible mechanism for the enhancement middle latitude plasma and subsequent plasma bubble occurrence was the eastward penetration electric field associated with IMF Bz southward turning.

Apply to be considered for a student award (Yes / No)?

No

Level for award (Hons, MSc, PhD, N/A)?

N/A

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

No

Primary author: Dr KATAMZI-JOSEPH, Zama Thobeka (South African National Space Agency)

Co-author: Dr HABARULEMA, John Bosco (South African National Space Agency)

Presenter: Dr KATAMZI-JOSEPH, Zama Thobeka (South African National Space Agency)

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