Vhf (54.95 Mhz) Radar Observations During Counter Electreojet (CEEJ) Events: Case Studies

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Present paper presents the few case studies on spectral characteristics of the afternoon Counter Equatorial Electreojet (CEEJ) irregularities (type-II) observed using VHF backscatter radar, and digital ionosonde from Trivandrum (dip latitude 0.5ºN, geographic latitude 8.5ºN, geographic longitude 77ºE), India during 1996-2000. Electreojet strength ΔH, obtained from ground magnetometer observations from Tirunelveli and Alibag has been used to monitor the onset and duration of the CEEJ events. On many occasion presence of blanketing type ES (ESb) in the ionograms with varying intensity and duration were observed in association with afternoon CEEJ events. Significant variability in the spectral parameters and height extent of the radar echoes has been observed in all the cases presented here. Plasma instability process (gradient-drift-instability) responsible for generation of these irregularities and role of the neutral wind will be discussed to understand the variability in the observed CEEJ spectral parameters.