ANALYSIS OF THE CORRELATION BETWEEN COUNTER EQUATORIAL ELECTROJET DETECTION AND GRAVITY WAVES OBSERVATION

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Several authors have extensively studied the current flows (eastward during daytime) in the equatorial E-region (~105 km) named Equatorial Electrojet. It is also well established that current reversal can be observed and are named Counter Equatorial Electrojet. Among the driving forces that cause the current reversal we find magnetic disturbances, but mainly neutral winds drag due to gravity waves (GW) or tides. In the present work, we analyze the correlation between the CEJ occurrence and the GW appearance, which modulates the ionospheric electric field and in turn modulates the ionospheric current. We analyze the GW signatures in ionospheric electric fields, inferred from a 50 MHz coherent backscatter radar data, and in the ionospheric currents, using magnetometer data; both of the equipments installed at São Luís, Brazil (2.51 °S, 44.27 °W, mag. lat.-2.3°).

Aeronomy, Gravity Waves, Counter Equatorial Electrojet

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