

Title : Study on vertical propagation of medium-scale gravity waves observed during the COPEX campaign

Session: S3: Wave propagation between low/middle atmosphere and ionosphere

Preferred type of presentation: Oral

Abstract:

We have ray-traced 15 medium-scale gravity waves (MSGWs) observed at Boa Vista (2.8°N; 60.7°S, dip angle 21.7°) during the Conjugate Point Experiment (COPEX). Ray-tracing database have been composed by wind from the TIE-CGM and HWM-93 models, and temperature profiles from the TIMED/SABER measurements, NRLMSISE-00 and TIE-GCM models. Doppler up-shifted MSGWs in the MLT region reached higher altitudes and larger amplitude than un-shifted waves in the thermosphere-ionosphere. Most MSGWs propagated upwards up to ~ 140 km of altitude and seem to be unlikely candidate to trigger equatorial plasma bubbles (EPBs) at the F layer bottom side. However, five of them propagated up to the altitude close to the F layer bottom side, where they could seed EPBs directly.

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