

Space Studies of the Upper Atmospheres of the Earth and Planets including Reference Atmospheres (C)

Whole Atmosphere Wave Coupling and Interaction Processes (C2.2)

REVERSE RAY-TRACING OF MEDIUM-SCALE GRAVITY WAVES OBSERVED IN NORTHEAST OF BRAZIL DURING THE 2009 SPREAD F EXPERIMENT

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Medium-scale gravity waves (MSGWs) have been observed in airglow images, at São João do Cariri (7.4°S; 36.5°W), during the Spread F Experiment from September to November 2009. We have ray-traced them in order to look for sources. The wind database, used in the ray-tracing, were obtained from a meteor radar and complemented by the HMW-93 model. Temperature profiles were obtained from the TIMED/SABER satellite. The reverse ray paths for two MSGWs (observed on 23-24 September 2009 and on 14-15 November 2009) indicate mesoscale convective complexes as likely sources. A cold front observed over 1200 km from São João do Cariri, on 12-13 November 2009, was suggested as a likely source for another MSGW.