

MESOSPHERE-IONOSPHERE COUPLING LOOKING FROM PENETRATION OF GRAVITY WAVES IN THE EQUATORIAL REGION

HISAO TAKAHASHI 1, C. M. Wrasse 2, M. J. Taylor 3, P. D. Pautet 3, A. F. Medeiros 4, D. Gobbi 1, M. A. Abdu 1, I. S. Batista 1, E. Paula 1, J.H.A. Sobral 1, S. L. Vadas 5, D. Fritts 5

1 INPE, São José dos Campos, Brazil, hisaotak@laser.inpe.br

2 UNIVAP, São José dos Campos, Brazil, cmw@univap.br

3 USU, Logan, USA, mtaylor@cc.usu.edu, dominiquepautet@gmail.com

4 UFCG, Campina Grande, Brazil, afragoso@df.ufcg.edu.br

5 CoRA, Boulder, USA, vasha@cora.nwra.com, <dave@co-ra.com>

During the Spread F Experiment campaign, under NASA Living with a star (LWS) program, carried out in the South American Magnetic Equator region from September 22 to November 8, 2005, we observed, in several cases, simultaneous occurrence of the mesospheric gravity wave events and formation of bottom type spread F and subsequent ionospheric bubble development. Signatures of the occurrence were monitored by ionosonde, coherent radar and airglow OH and OI 6300 imager. Ray tracing methods could reveal the gravity wave source region in the troposphere and also possible penetration into the ionosphere. Present paper summarizes the observational evidences and results of the data analysis, focusing the discussion in the mesosphere-ionosphere coupling processes.

Gravity waves, plasma bubbles, SpreadF

Hisao Takahashi, Instituto Nacional de Pesquisas Espaciais, CP-515, Av. dos Astronautas, 1758, Jd. da Granja, 12227-010 São José dos Campos, SP, Brasil.
Tel: (+55)-(0)12-3945-7145, Fax:(+55)-(0)12-3945-6740,
E-mail: hisaotak@laser.inpe.br