

INTERNAL GRAVITY WAVES ACTIVITY ABOVE EASTERN ANDES AND ALPS DERIVED FROM GPS RO DATA

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On the basis of the 2006-2013 period of FORMOSAT-3/COSMIC Global Positioning System (GPS) Radio Occultation (RO) data, internal gravity wave activity above Eastern Andes and Alps is analyzed. The RO technique provides estimates of atmospheric density, temperature, and water vapor content with high vertical resolution, global coverage, and high accuracy. The orography interacting with the mean flow, gives place to the generation of mountain waves which in turn, affect the tropospheric flow. The widely studied convective activity above subtropical South America and Alps also generates gravity wave activity in these regions. From the detection of convective systems using satellite information (GOES and METEOSAT), co-located cases study between these systems and wet RO profiles of temperature and bending angle are determined. The bending angle constitutes a direct measurement which is independent of models. From a reference climatology of RO bending angle and atmospheric temperature, anomalies are detected at each region, in particular, described for 2 sets including 4 case studies. From these anomalies, cloud tops may be determined. The wave activity is evaluated, after a filtering process, from the estimated potential energy.

Palabras clave: Andes, waves, storms