



Wave activity in the vicinity of the tropopause, calculated from GPS radio occultation a) temperature and b) potential temperature profiles

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Previous wave activity (WA) global analysis from GPS radio occultation (RO) temperature data profiles are considered to be an important tool in the understanding of the transfer of momentum and energy between the troposphere and the stratosphere. As it is well known, this method includes several assumptions and restrictions, as small departures from spherical symmetry, refraction effects due to background winds and vertical and horizontal resolution. In addition, any wave analysis must deal with the morphology of T profiles and their abrupt vertical derivative discontinuities near the tropopause/s, mainly at equatorial regions. This feature prevented us in previous works to study wave structures from RO data in the lower and middle atmospheres separately, imposing an upper cutoff to the observable vertical wavelengths. As a consequence, important WA contributions expected among planetary and mountain waves were systematically excluded. We now compare the benefit of calculating potential wave energy near to the tropopause alternatively, after band-pass filtering simulated and real potential temperature profiles derived from RO events, taking into account the less abrupt behaviour of this last parameter.