



A Global Analysis of Wave Potential Energy in the Lower and Middle Atmosphere, from GPS Radio Occultation Long Term Data.

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From 55 months of GPS radio occultation temperature data (May 2001–November 2005), obtained from CHAMP and SAC-C low orbit satellites, an analysis of gravity wave activity in equatorial and non equatorial stratosphere and upper troposphere, is performed. The time and height wave energy variability associated to a possible ensemble of long, intermediate and short period planetary, inertio-gravity, hydrostatic and non hydrostatic gravity waves is interpreted. Different mechanisms affecting the momentum and energy transfer between lower and middle atmospheres, as thermal damping and critical level absorption, are discussed. The specific potential energy has been calculated taking into account the vertical wavelength shift according to the different stages of evolution of QBO and non equatorial background mean zonal winds. The correlation between wave activity and OLR patterns above typical convective areas is made. A comparison with previous results is also included.