

# A Study on Global Distribution of Stratospheric Gravity Waves Based on Temperature Data by GPS Occultation Soundings.

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Using fine vertical temperature profiles in the stratosphere obtained by the GPS occultation technique in Apr. 1995 through Feb. 1997, global distribution of gravity waves was studied. Fluctuations with vertical wavelengths shorter than 10 km were examined as gravity waves. In the lower stratosphere, annual variation of gravity wave potential energy (PE) with a maximum in winter is dominant in the middle and high latitude region in each hemisphere. On the other hand, PE is maximized twice a year at solstice in the upper stratosphere. In particular, a maximum in December is clear in almost the entire latitude region. A ray tracing analysis suggests that the PE maximum in December is due to gravity waves excited by vigorous convection in the equatorial troposphere and propagating poleward and upward.

