

Tropical GW Acitivity Associated QBO Signal And Its Latitude Dependence Seen in A 7-year Long High Resolution Radiosonde Data-set

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A 7-year long high resolution radiosonde data-set for tropical latitude stations in the North Pacific was applied for investigating lower stratospheric inertial GW activity (GW). Investigation results for Truk Island (7.4N, 151.8E) indicated that the GW energy exhibited inter-annual variation that can be closely associated to those seen in the equatorial lower stratospheric zonal winds, i.e., the quasi-biennial oscillation (QBO). The GW energy always reached maximum at the time when the equatorial zonal winds transit from Easterlies to Westlies. This result is consistent with and further consolidated the previous result of Wang and Geller (2003) where only 4-year long data has been used.

The QBO like variation in GW activity disappeared at Gaum Island (13.5N, 144.8E) showing its latitude dependence, which further reflected the latitudinal extent of the QBO. Instead, only seasonal variation was seen at this latitude.

Additionally, for both latitude, seasonal variation in the GW activity was clearly seen in the GW energy with the maximum happed in Northern winter (January) and minimum in Northern summer (June). Details of the research will be introduced in the presentation.