

Observation of infrasound generated by typhoons in the ionosphere

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Infrasound waves associated with seven typhoons that passed over Taiwan or in its close vicinity during the time period 2014-2016 were investigated. The infrasound waves were observed by continuous Doppler sounder at height range approximately from 200 to 300 km. Their spectra differed during the individual events and covered roughly the spectral range from 3.5 to 20 mHz. The lower boundary was likely determined by the acoustic cut-off frequency in the mesopause region, whereas the upper boundary mainly by the attenuation. The peak of power spectral density was usually around 5 mHz (dominant periods between 3 and 4 min). The observed spectra exhibited fine structures that likely resulted from modal resonances. The infrasound was usually recorded during several hours for strong events, especially for two typhoons in September 2016. The observation was interrupted at times when the sounding frequency was higher than the critical frequency of the ionosphere.