

Wind Profiler Observations of Spectral Characteristics of Wind Variability Over Asia Monsoon Region

H.-C. LIN¹, CHEN-JEIH PAN¹, K. KRISHNA REDDY², HSIN-CHIH LAI³

¹*Institute of Space Sci, National Central University, Taiwan*

²*JAMSTEC, Japan*

³*Center for Teachers' Education, Chung-Jung Christian University, Taiwan*

The newly developed Hilbert-Huang Transformation (HHT) and the wavelet analysis are carried out for spectral analysis of the long-term wind data collected at different locations viz., at Gadanki/India (1999 to 2000), Aimeliik/Palau (2003 to 2005) and Southern Taiwan (2003 to 2005). The data period are long enough to average the perturbations of Gravity wave and short-period planetary waves. As such, it is used to define the tidal-period perturbations in horizontal wind. From the various spectral analysis techniques, we noticed advantage of the HHT in the nonlinear and transient wave activities. We further perform spectral analysis of the data, revealing a strong 3-day wave activity in the meridional wind, a 12 hour perturbation in zonal wind, and some residual perturbations likely the result of nonlinear interactions.