

Data Processing of the Wind Profiler Radars in CRL

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Communications Research Laboratory has developed an on-line data processing method for measuring wind velocity profiles by using the DBS mode of the 400MHz- and 1.3GHz-band wind profiler radars (WPRs) in Okinawa. The aim of this processing method is to enhance the statistical reliability of wind velocity estimation. First, a time-domain median filter is applied to obtain robust Doppler spectra, so that true spectral peaks of atmospheric turbulence echoes can be chosen from other spectral peaks due to spurious noises. Second, three components of a wind velocity vector is not estimated from small number of radial wind components, but from many radial components obtained by prior observations with the same and different operation parameters. This processing method could improve the estimation accuracy of wind velocity vectors even from the noisy Doppler spectra of the WPRs.