

Estimation of raindrop size distribution profile using EAR and BLR

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Raindrop size distribution (DSD) is important and useful to analyze precipitation microphysics and to improve the accuracy of estimating rainfall rate from the radar observation. Estimation of DSD in Koto Tabang has been done using single-frequency algorithms by Koizu et al., 2003, Renggono et al., 2006, and Marzuki et al., 2009. Now this study presents estimation of DSD using a dual-frequency algorithm with two radars, i.e., the Equatorial Atmosphere Radar (EAR) that operates at 47 MHz to measure the back-ground clear-air motions and a Boundary Layer Radar (BLR) that operates at 1357.5 MHz to provide precipitation return. We present a comparison of DSD estimates between dual-frequency versus single frequency algorithm and some results of vertical DSD profiles using the dual-frequency algorithm.

Keywords: DSD, Radar, Equatorial atmosphere