ABSTRACT

IDRA is a high resolution radar established by IRCTR in Netherland. IDRA is intended for detailed observation of the spatial and temporal distribution of rain. In this study, signal processing on IDRA radar added the DWT (Discrete Wavelet Transform) and IDWT (Inverse Discrete Wavelet Transform) methods as a function of compression and decompression Wavelet methods can be used to show temporal behavior, to improve data quality, to be used to detect certain events.

The final objective of this study is to find out the performance of radar reflectivity by adding the discrete wavelet transform (DWT) and inverse discrete wavelet transform (IDWT) method as a function of compression and decompression toward reference data. The performance of radar reflectivity is obtained from the values of MSE, PSNR, and SNR that carried out in the testing process.

In the testing process, reference data is processed by compressing data using the DWT method. Then, the compression results are inversed using the IDWT method. Decompression data compared toward reference data to obtain the values of MSE, PSNR, and SNR. After the testing process, the best MSE value = 1,016 when using db2 and sym2 decomposition level 3. For the best PSNR value = 336,441 dB, the best SNR = 315,908 dB, obtained when using haar with decomposition level 1.

Keywords : IDRA, DWT *(Discrete Wavelet Transform), 4TU.Center for Reasearch Data*