

## Rainfall Estimation from Radar in different seasons over Northern Thailand

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Thailand was located on way though of tropical cyclone were formed in South China Sea or Pacific ocean and move to northeast of Thailand. The prevail storm in Thailand often downgraded to tropical depression. Northern Thailand has a tropics climate into three seasons. Rainy (May–October), Winter (October–February) and Summer (March–May). Averages rainfall around 1,230 mm/year received by the influence from two types of monsoon winds. Northeast monsoon, brings a cold and dry air from China to cover the major part of Thailand. And Southwest monsoon, brings the warm moist air from Indian Ocean towards Thailand causing abundant rain over the country.

The objective of the research is to evaluate Z-R relationship ( $Z = aR^b$ ) for rainfall estimation in different seasons. This study use reflectivity data from Omkoi radar station in Chaing Mai Thailand and rainfall data in radius of 240 km from Omkoi weather radar station from Thai Meteorological Department. Method for matching reflectivity data (Z) and rainfall rate (R) relationship are PMM (Probability Matching Method). We find that the Z-R relationship in Rainy (May–October) is  $Z = 103.83R^{1.51}$  and the Z-R relationship in Non-rainy (November–December, January–April) is  $Z = 102.18R^{1.46}$ . For the same rainfall intensity, reflectivity value in non-rainy season is higher than in the rainy season. This research shows that each monsoon causes a different characteristics of rainfall. In Rainy, Thus rainfall estimation for each monsoon should be based on different Z-R relationship for more accuracy.

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