

Itthi Sa-nguandee 2010: Rainfall Estimation in Thailand Using FY-2C Satellite Data. Master of Engineering (Information and Communication Technology for Embedded Systems), Major Field: Information and Communication Technology for Embedded Systems, Department of Electrical Engineering. Thesis Advisor: Associate Professor Mongkol Raksapatcharawong, Ph.D. 41 pages.

Remote sensing technology provides good spatial resolution for rainfall estimation which is very important for monitoring, prediction and mitigation of rain disaster. Today, data from infrared channel of meteorological satellite have capability to estimate rainfall, while rain gauge and radar should be utilized for calibration. The infrared channel is used for rainfall estimation by the relationship of brightness temperature (BT) from satellite data and surface rainfall from rain gauge, but it is widely accepted that a specific satellite rainfall technique is not necessarily applicable to another climatic region due to differences in dynamic rain processes from region to region and the relationship between infrared channel measurement of cloud top temperature and surface rainfall from rain gauges is non-linear, algorithm must be studied and specifically developed for Thailand.

For improve rainfall estimation accuracy in Thailand, this study provide Rainfall Estimation Framework that can use to find mask out non-raining information technique for identify rain cloud and rainfall estimation model from the relationship between data from FengYun-2C (FY-2C) infrared channel and surface rainfall from rain gauge that suitable for estimate rainfall in Thailand and using FY-2C numerical data instead of satellite images in the study.

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Thesis Advisor's signature