**Assessment of Cloud Area using Field Server and Image Processing**

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**Abstract:** Knowledge regarding the cloud area is very important for use of Metrological Science. Cloud area is a significant factor to indicate how the weather is. The main purpose of this research is to automatically assess cloud area in the sky from the images that are daily provided by field server. The image is a composition of the sky and the field of the crop such as rice, sugarcane and cassava etc. Firstly, Otsu threshold algorithm is needed to separate the sky area from the others. The sky area is only concentrated for detecting cloud region. Color index is used as the feature to tolerate the variation of light intensity. Supervise Bayesian Classification is performed to extract cloud area from the sky. Lastly, the cloud and sky areas are compared to calculate percentage of cloud area in the sky. The experiments were conducted on rice field in Roi Et province and cassava field in Nakhon Rachasima province which are in northeast region of Thailand from November to December in 2013. The result shows that our proposed method estimates cloud area effectively.

Key word: Cloud Area, Classification, Field Server

Suggested topics: (1) Data processing; Automatic classification (2) New Generation Sensors and Application; Digital Camera; (3) Remote Sensing Application; Climate/Environment

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