

Satellite Retrievals of Global Precipitation and High-resolution Tropical Weather Forecasting and Climate Modelling for Climate Change Mitigation and Adaptation

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Accurate high-resolution precipitation observations, weather forecasts, and climate simulations are important for precision agriculture, management of water resources and natural disasters, and climate change mitigation and adaptation. This talk presents an overview of research of Surussavadee and coauthors on 3 main topics, including: 1) retrievals of global precipitation using observations from passive millimeter-wave and geostationary infrared satellites, 2) high-resolution tropical weather forecasting, and 3) high-resolution tropical climate simulation. Algorithms and models developed in the research have been employed to develop the invention “www.worldmeteorology.com and the mobile application WMAApp” and the Facebook page “KMITL Weather Forecasts for Thailand” providing unprecedented accurate and high-detailed 24-28 hour weather forecasts for SE Asia, accurate 5-6 day weather and cyclone forecasts for Asia, and accurate global precipitation estimated from satellite observations. WMAApp is freely available for both Android and iOS devices and has >160,000 downloads. www.worldmeteorology.com has >350,000 page views. As of May 23, 2018, which is less than a year after its launch, the Facebook page “KMITL Weather Forecasts for Thailand” has more than 210,000 followers, 203,000 likes, and the score of 4.8/5.0. The information from the invention has been used to produce the weather forecasting program “TNN Weather” on the TNN24 TV channel, and has been employed by the Department of Royal Rainmaking and Agricultural Aviation for improving its daily operations since July 2017.

Keywords: Facebook page “KMITL Weather Forecasts for Thailand”; high-resolution tropical climate modelling, high-resolution tropical weather forecasting, satellite retrievals of global precipitation, “www.worldmeteorology.com and the mobile application WMAApp”

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