

Rainfall Estimation Using Himawari-8 Meteorological Satellite Imagery in Central Taiwan

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Abstract : The objective of this study is to estimate the rainfall using the new generation Himawari-8 meteorological satellite with multi-band, high-bit format, and high spatiotemporal resolution, ground rainfall data at the Chen-Yu-Lan watershed of Joushuei River Basin (443.6 square kilometers) in Central Taiwan. Accurate and fine-scale rainfall information is essential for rugged terrain with high local variation for early warning of flood, landslide, and debris flow disasters. 10-minute and 2 km pixel-based rainfall of Typhoon Megi of 2016 and meiyu on June 1-4 of 2017 were tested to demonstrate the new generation Himawari-8 meteorological satellite can capture rainfall variation in the rugged mountainous area both at fine-scale and watershed scale. The results provide the valuable rainfall information for early warning of future disasters.

Keywords : estimation, Himawari-8, rainfall, satellite imagery

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