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Detection of short-lived convective clouds using geostationary satellite images

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Remote sensing by satellite and radar plays an important role in providing nowcasting information. Weather forecasters in regions where are uncovered by radar observations, need to rely satellite product analysis to issue the nowcasting or early warning. This study aims to explore the pattern of cloud formation in initial development based on Himawari-8 images. Two cases on February 11th 2021 in East-Nusa Tenggara and August 29th 2022 in Bengkulu were identified two short-lived convective clouds which coincided with rainfall in the category of moderate and heavy. After analyzing the real time images processed by BMKG satellite imagery sub-division; namely Rainfall Potential, Enhanced Water Vapor, and Rapid Developing Cumulus Area (RDCA) product, results shows that cloud-cells were detected in 10-20 minutes lifecycle, with diameter size of 3-5 km. The cloud top temperature measured -42.3 oC and -62.3 oC. Overall, there are certain characteristics related to short-lived convective clouds that must be considered by forecaster while producing nowcasting or early warning.