# Lightning Observations in the Philippines and Western Pacific Region for the Intensity Prediction of Severe Weather

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Lightning activity represents the thunderstorm activity related to severe weather events, such as tropical cyclone, torrential rainfall, tornado, down burst, and so on. Recent studies suggest that the intensity development of severe weather may be predicted when the lightning activities at the severe-weather related thundercloud are monitored. Many Southeast Asian countries suffer from the damages caused by the tropical cyclones (typhoons) and related severe weather events, and they have a strong demand for the intensity prediction of these phenomena. Thus, we started developing a new lightning observation system under the 5-year project (ULAT: Understanding Lightning and Thunderstorm) and installing the observation system in the Philippines and the western Pacific region. There are two types of the lightning observation system: one system (P-POTEKA) consists of a slow-antenna and a field-mill sensor, and another system (V-POTEKA) consists of a VLF sensor. Each system equips an automatic data processing unit, which automatically analyzes the lightning-related pulse signals detected by the lightning sensors, extracts the necessary information (trigger time and pulse amplitude), and transmits the data to a data server via the 3G data communication line. By September 2018, a total of 50 P-POTEKA systems and 10 V-POTEKA systems will be fabricated. By March 2020, the P-POTEKA systems will be installed in Metro Manila, and the V-POTEKA systems will be installed in all parts of the Philippines. At the presentation, we will show the initial results derived from the lightning observations and will show the current status of the ULAT project more in detail.

Keywords: lightning discharges, severe weather