

# **LIGHTNING DISTRIBUTION OF LANDFALLING TROPICAL CYCLONES IN THE PHILIPPINES**

Renier Agas  
Institute of Environmental Science and Meteorology  
University of the Philippines Diliman

## **ABSTRACT**

Lightning is a discharge of electricity in the atmosphere produced by thunderstorm clouds. Tropical cyclones (TC) are warm-core low-pressure system consisting of an organized group of thunderstorms clouds that brings heavy rainfall, flood, strong winds, storm surges, and lightning. An average of 9 TCs make landfall in the Philippines annually which causes loss of lives and properties. Previous studies have shown that most lightning activities inside TCs could provide information on TC properties. This study aims to provide a better understanding of the lightning activities in landfalling TCs in the Philippines using 3-year (2019-2021) lightning data from the newly-acquired lightning detection system - Earth Networks Total Lightning Network (ENTLN) – by PAGASA. TC track and intensity data from PAGASA will be used to determine hourly TC centers of selected TC events and as basis for associating lightning events to the TCs. Each of the selected TC events will be divided into three regions based on electrical characteristics: eyewall, inner rainband, and outer rainband. By inspecting the lightning activities in the different regions of TC, it is the aim to look for association with TC characteristics such as intensity, rain rate, etc.