

METEOROLOGICAL CHARACTERIZATION OF HAILSTORMEVENTS IN THE PHILIPPINES FROM 2009-2018

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ABSTRACT

Hail is a type of solid precipitation in the form of balls of ice, which can cause significant damage to infrastructure, and agriculture. The colder atmospheric conditions in the middle latitudes favor the formation of hailstorms, while a tropical environment makes it difficult for hail to form, thus hailstorm occurrence in the tropics is unusual. Due to its rarity, hailstorm in the Philippines receives little to no attention. However, in the recent years, awareness of hailstorms is slowly rising due to news and individual reports. Local cases of severe hailstorms causing minor to millions of losses to properties and crops have also been reported.

This study aims to give preliminary analysis on the hailstorm activities in the Philippines. The atmospheric conditions on the days when a hailstorm occurred will be analyzed to show indicative characteristics of a hailstorm event. Hailstorm events are favored by an unstable atmosphere, high low-level moisture, and a strong updraft. The vertical temperature profile of the atmosphere will be examined using radiosonde observations. Prevailing large-scale atmospheric patterns on the day of the events will be identified using data from atmospheric reanalyses. Lastly, several convective indices will be used to describe the potential for convection of the atmosphere on the days with hail occurrence.

Keywords: Hailstorms, Convection, Radiosonde, Circulation Patterns