

S2-18

**Characteristic analysis of the Mesoscale Convective System phenomenon
in extreme rainfall events in tropical island regions (Ambon Island)**

Puput Mustika Pasaribu

BMKG

An extreme rain event for 12 hours with rainfall of 99.8 mm on June 13-14, 2017 occurred on Ambon Island and resulted in a flood disaster that caused losses to the surrounding community. The characteristics of Ambon Island which is a tropical area as well as an archipelago support the formation of the Mesoscale Convective System even though Indonesia is generally experiencing a dry season period. This research was conducted to analyze the Mesoscale Convective System that is clearly visible based on Himawari-9 IR channel satellite imagery data that occurs during extreme rainfall periods. From the satellite image data, the MCS area, characteristics and MCS lifetime are known for 7 hours from the formation phase to dissipation based on the time series of cloud top temperature brightness which reaches -700C . At the end of the study, an analysis of the atmospheric conditions that triggered the event was carried out using WRF model output data with a data density of 10 km. The disturbance factor that causes MCS to form is the presence of a vortex located right on Seram Island and Buru Island. Such conditions force the air to move towards the vortex area so that on the streamline map there is clearly a large area of convergence along the area between the 2 vortices which are positioned directly above Ambon Island and its surroundings. These factors trigger the formation of a collection of convective clouds that merge into a meso-scale convective system.