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## ATMOSPHERIC DYNAMICS AND MOISTURE TRANSPORT FORMING TROPICAL CYCLONES IN INDONESIAN MARITIME CONTINENT

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### Abstract

Indonesia's position in the tropics causing Indonesia has small potential to be directly affected by tropical cyclones. However, over the last 10 years a number of tropical cyclone phenomenon have occurred in the region of 0o to 10o LS and affect weather in Indonesian Maritime Continent region. They are Durga (2008), Kirrily (2009), Anggrek (2010), Bakung (2014), Cempaka (2017), Dahlia (2017) and Flamboyan (2018). Analysis of atmospheric dynamics during occurrence of these tropical cyclones needs to be done to obtain the characteristics of its growth in Indonesian Maritime Continent. The research utilizes ECMWF include wind, vorticity, divergence, vertical velocity, mean sea level pressure and moisture transport with resolution  $0.125^\circ \times 0.125^\circ$ , vertical shear data from CIMSS and SST data from NOAA. The results showed that supporting parameters of tropical cyclone growth such as SST reached more than  $27^\circ\text{C}$ , the lowest pressure reached 984 mb, maximum wind speed reached 50 knots, vortices between  $-12 \times 10^{-5}/\text{s}$  to  $-2 \times 10^{-5}/\text{s}$ , divergence between  $-10 \times 10^{-5}/\text{s}$  up to  $-0.5 \times 10^{-5}/\text{s}$ , vertical velocity ranges  $-1.4/\text{s}$  to  $-0.4/\text{s}$ , vertical shears ranging from 10 to 15 knots, transport moisture ranges from 800 to  $1600 \text{ kg}/\text{ms}^{-1}$ , and tropical cyclone life ranges from 3 to 5 days.