INTISARI

Hujan ekstrem merupakan fenomena hujan dengan intensitas yang sangat tinggi. Hujan ekstrem dapat memicu fenomena alam lain yang dapat mengganggu aktivitas manusia. Fenomena hujan ekstrem biasa muncul pada fenomena siklon tropis. Penelitian ini menggunakan data hujan dari GSMAP Jaxa dan *Sea Level Pressure* (SLP) dari NCEP/NCAR Reanalysis 1. Proses identifikasi hujan ekstrem dilakukan dengan *pixel detection* dan *threshold* yang digunakan adalah 50 mm/jam lalu diambil nilai 10 persentil tertinggi. Data SLP dianalisa menggunakan teknik *moving-window analysis*. Hasil yang diperoleh menunjukkan bahwa dalam 10 kejadian hujan ekstrem tertinggi, 4 diantaranya terjadi karena pengaruh siklon tropis. 6 sisanya berasosiasi dengan fenomena iklim lain seperti MJO, ITCZ, ENSO, dan IOD. Hujan ekstrem dengan intensitas yang sangat tinggi cenderung berasosiasi dengan anomali tekanan rendah di lautan. Meski demikian, anomali tekanan rendah dan hujan ekstrem bukan selalu berarti menjadi fenomena siklon tropis.

Kata kunci: Hujan ekstrem, *low pressure system*, *pixel detetction*, siklon tropis, Indonesia.

ABSTRACT

Extreme rainfall is a phenomenon where rainfall intensity exceed certain threshold. In most cases, extreme rainfall can lead another phenomenon as catalyst which can disrupt human activities or even bring disaster. Extreme rainfall commonly comes as part of tropical cyclones. This study uses rainfall gauge data from GSMAP Jaxa and Sea Level Pressure (SLP) from NCEP/NCAR Reanalysis 1. Using rainfall gauge data from GSMAP Jaxa, extreme rainfall that occurs in certain areas can be identified. Threshold that are being used are 50 mm/hour as fixed threshold then took its 10 percent highest intensify as specific site threshold. Using pixel detection method, all extreme rainfall which satisfy those requirements can be acquired. The SLP dataset itself can be used to examine whether low pressure system is present or not alongside extreme rainfall phenomenon. This can be done using moving-window analysis method. From the 10 most extreme rainfall that has been identified, 4 out of 10 was occurs as part of tropical cyclones while the rest of them was not. Those extreme rainfall that has not been part of tropical cyclones however, was asociated with much bigger phenomenon such as MJO, ITCZ, ENSO, and IOD. Regardless being part of tropical cyclone or not, there was low pressure system are detected relatively near in each one of them. In this case, extreme rainfall tends to correlate with low pressure system in most cases though it doesn’t always tied with tropical cyclones.

Keywords: extreme rainfall, low pressure system, pixel detection, tropical cyclones, Indonesia.