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Investigation of Extreme Rainfall Patterns around Antalya and Muğla Cities in Türkiye by Using C Band Doppler Radar Data

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As is known, rainfall varies spatially and temporally with regard to intensity and frequency. Floods, related to extreme rainfall cases, cause stress on geophysical system and community if climate change is considered. For this reason determining of extreme rainfall patterns is very important. While obtaining three dimensional status of hydrometors in atmosphere is not possible only by using ground station networks, it is possible by using weather radars. Therefore, weather radars provide significant contribution to studies about getting cloud and rainfall patterns. The aim of this study is to investigate spatial patterns of extreme rainfall events in Antalya and Muğla cities which are located on the Mediterranean coast of Türkiye. Firstly, hourly rainfall (RN1) and rain rate (SRI) products of 2 C band doppler radars and raingauge data between 2015 and 2020 will be processed by a software named MeteoRadar which is developed by İstanbul Technical University. It is capable of reading, decoding, parallel processing and visualization. Secondly, extreme rainfall patterns will be obtained over 2 study areas. Finally, after validation by using raingauge data, results will be discussed in detail.

Key Words: Antalya, Extreme rainfall, MeteoRadar, Muğla, RN1, SRI, Weather radar.