

## Study on mountainous enhancement to the precipitation systems in Indonesia by using an X-band Doppler radar

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West Sumatera is located in the western part of Sumatera Island. This region is facing directly to the Indian Ocean. West Sumatera has a complex topography which is including mountainous areas, particularly in the area near Bukit Barisan. Heavy rain occurs frequently in this region. Some studies have suggested this extreme event was caused by orographic rain, the amount of precipitation that forced to deposit due to mountain blockage.

The purpose of this study is to figure out the behavior of orographic precipitation in West Sumatera. The data of X band doppler (XDR) radar will be employed. The XDR was installed at Sungai Puar (0.36\_S, 100.41\_E, 1121 m above mean sea level), located 20 km to the south-southeast of the EAR site at Kototabang (0.20\_S, 100.32\_E). The XDR collected three-dimensional reflectivity and Doppler velocity data every 4 min, through a series of conical scans with antenna elevation angles from 0.6 degree to 40 degree. The observation range of the XDR is 83 km in radius (Kawashima et al., 2006).

The data obtained during 10-22 April, 2004, was chosen for this study. The results shows that strong precipitation occurred at some high altitude areas. The temporal variability of precipitation shows that heavy rainfall occurs frequently in the afternoon.

Keywords: radar, orographic, precipitation, enhancement