

The Impact of Curvature Coastline to Rainfall Offshore over Maritime Continent

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The characteristics of rainfall offshore and its relation to the shape and size of coastline type over Indonesian Maritime Continent is not clearly understood. This paper reveals an increasing rainfall offshore over curvature coastline based on TRMM 3B42 data and simulates the WRF-ARW to understand the dynamical atmosphere that induced high rainfall offshore on March 21-25, 2014.

The results show that rainfall offshore over maritime continent has intensive intensity over straits - i.e Nias-Sumatera Strait, Malaka Strait, Sulawesi Strait and curvature coastline area - i.e Cendrawasih Bay, Tomini Bay, Tolo Bay. Cendrawasih Bay is the biggest rainfall offshore intensity over maritime continent during 1998-2015 based on daily composite of TRMM 3B42 data. Orographic rainfall nears Cendrawasih Bay give significant impact to rainfall offshore. The cloud system over mountain propagates to oceans created small rainfall offshore area near coastline. Cold pool that formed from decaying cloud, generate low level convergence with land breeze and prevailing wind. Squall line develop from this convergence at early night time and spread out from inner area to outer area until morning. This squall line system gives impact of high rainfall offshore over Cendrawasih Bay

Key words: rainfall offshore, curvature coastline, trmm