

Yulihastin, E., T. W. Hadi, M. R. Abdillah, I. R. Fauziah, and N. S. Ningsih, 2022: Propagation of convective systems associated with early morning precipitation and different northerly background winds over western Java. *J. Meteor. Soc. Japan*, **100**, 99-113.

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**Plain Language Summary:** The early morning precipitation (EMP) events over the northern coast of western Java are characterized by propagating convective systems. We found that these propagating precipitation systems are modulated background wind conditions. The EMP is mainly induced by a precipitation system that propagates from sea to land in cases of both strong northerly (SN) and weak northerly (WN) wind background. In case of WN, the propagating systems moving from inland to the sea also play a role on the EMP. We suggest that the propagations are sustained by cold pool and background wind interactions.

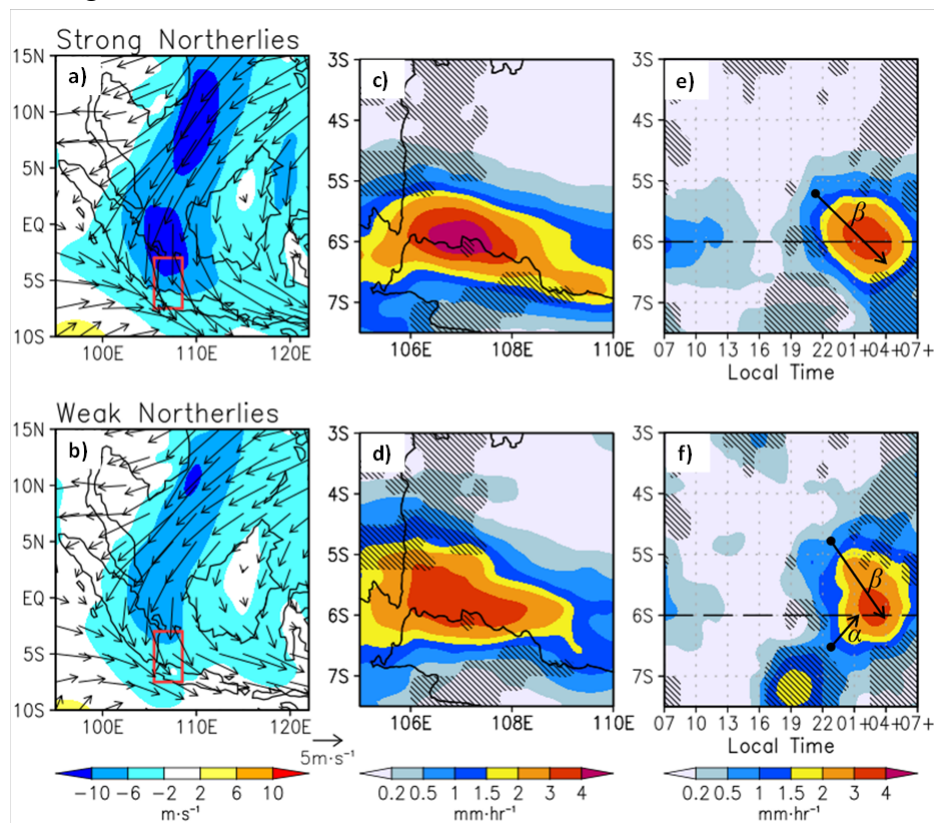


Figure 1. Composite averages of EMP events classified as (a) strong northerly and (b) weak northerly cases. (a, b) Daily mean of wind at the 925 hPa. (c, d) EMP rates averaged over 01:00–05:00 LST. (e, f) Hovmöller diagrams of diurnal precipitation in local time. Black arrows denote land-to-sea ( $\alpha$ ) and sea-to-land ( $\beta$ ) propagating systems with significance test.

- Cold pool propagation and its advection by the prevailing winds is responsible for the propagating convection, which explains its dependence on the strength of background wind.