Heavy rain (snowfall) events generated locally by the ocean wind convergence observed by QUIKSCAT

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A heavy snowfall event was observed in Busan on 6 March 2005. This event, with an unusually high snowfall maximum of 30cm, was the record breaking event over last century. The ocean wind observed by QUIKSCAT revealed that the strong wind convergence was formed in the offshore area near Busan. The upward moisture convection over the ocean combined with upper-level shoreward wind provided prefect conditions for the localized heavy snowfall. The generation of this heavy snowfall was rather rapid and thus was not detected by the radar in time for the weather warning system.

Other heavy rainfall events in the central and western part of the Korean Peninsular where frequent heavy rain events were occurred were also studied using QUIKSCAT wind and 500 h-Pa level wind. The most of the cases showed similar situation: surface wind convergence in the ocean with upper-level shoreward wind. Strong wind convergence without shoreward upper-level wind did not produce rain. This study suggests that QUIKSCAT wind should be included in the weather forecasting model for the better heavy rain or snowfall prediction.