



## **Frontal Wind Fields Obtained from a UHF Wind Profiler Radar Network**

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The three-dimensional wind field (WPR3D) was derived for the passage of the Jangma front based on observation networks of nine wind profilers operated by the Korea Meteorological Administration (KMA). The dynamical structure of the storm front and heavy rainfall due to the mesoscale convective system were identified. Strong southwesterly winds that occurred due to the lower jet before the storm passed were well retrieved. As the front passed, the wind changed from a northerly to a northeasterly wind, before gradually changing again to a northerly wind. Compared with the wind vector of a single wind profiler and a local data assimilation and prediction system (LDAPS), the WPR3D wind showed a wind speed accuracy of approximately 70% at an altitude of 1.5 km, and underestimated the wind speed by 0.5 ~ 1.5 ms<sup>-1</sup>. The storm relative helicity (SRH) calculated by the WPR3D during north-south movement of the storm-line successfully predicted that strong precipitation over 15 mmh<sup>-1</sup> would occur 1-3 hours later. This study can be used to analyze data on severe weather phenomena such as heavy rainfall.