

On the value of operationally synthesized multiple-Doppler wind fields

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Abstract

The ability to collect radial velocity measurements at long range resulting from the deployment of innovative Doppler schemes within operational radar networks brings new perspectives in terms of exploitation of operational Doppler data, including the ability to routinely retrieve meso- β three-dimensional (3-D) multiple-Doppler wind fields over extensive areas. In this paper, we evaluate the potential of this new capability in terms of operational applications using radar data collected by the French radar network ARAMIS. The retrieved 3-D wind fields are shown to provide reliable and continuous mapping of the kinematic structure of rain events and appear particularly suitable for both short term forecasting and model verification purposes.

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