中央氣象局防災降雨雷達
資料同化效益之初步評估

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摘　要

　　台灣地區具高密度雷達網，可提供降水系統之科學研究、監測與災害預警等，而發展雷達資料同化系統以改進短期定量降雨預報，則是將雷達觀測的效益進一步發揮的重要途徑。

　　為提升區域模式對於短延時、強降雨系統之數值預報能力，本局於105年底建置對流尺度資料同化系統，透過滾動式更新策略來同化雷達資料，提供模式可描述當下大氣狀態之初始條件，提高模式即時預報能力。為精進降雨與淹水預警能力，於106年開始，陸續啟用3座降水雷達，投入災害防救行列，因此，如何於數值模式中最佳化使用如此高時空解析度資料來提升資料同化技術進而提升對短延時、強降水天氣系統的預報能力，仍為數值預報研發重要的議題。

　　本研究希望能藉由應用高時間密集的雷達觀測資料來改善模式背景場，以得到較佳的定量降雨預報，並藉由評估不同快速循環更新頻率對於雷達資料同化系統之影響，期望能進一步提升及短期定量降水預報的能力。

關鍵字：雷達資料同化、快速循環更新、定量降雨預報

The benefits of the rain radar data assimilation on the QPF of the severe frontal rainfall event

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Abstract

　　Taiwan has a high-density radar network, which can provide scientific research, weather monitoring and disaster warning of the heavy precipitation system. Develop radar data assimilation system to improve short-term quantitative rainfall forecast (QPF) is an important way to give full paly to radar data.

　　In order to improve the numerical prediction capability for heavy rainfall systems, CWB Established convective-scale data assimilation research and development system at the end of 105 (RWRF). Radar data is assimilated in the RWRF 1-h period adding further detail to that provided the model current atmospheric state to improve real-time forecasting capability. From 106, three rain radars were successively used for disaster prevention. How to effectively use radar data on radar data assimilation system to improve rainfall forecasts is an important issue.

　　The research focus on improve RWRF QPF by use high time density radar data to improve the model background field and give RWRF a well-advised data assimilation strategy.

Keywords: radar data assimilation、Rapid refresh cycle、quantitative precipitation forecast