

福衛七號掩星資料前處理對區域模式資料同化之影響與評估

陳盈臻 陳文柔 洪景山 張保亮

氣象資訊中心

中央氣象局

摘要

由台美合作之福爾摩沙衛星七號衛星已於 2019 年 6 月 25 日升空，每日約可提供 4000 筆的全球中低緯度氣象觀測資訊，其中約 400~600 筆大氣剖面觀測資料位於氣象局區域模式場域範圍中，這些資料如何適當地用來改善區域模式預報表現，仍有待進行詳細的評估。本研究以現有同化系統設定，進行福衛七號觀測資料對於預報表現的評估，初步結果顯示，福衛七號掩星資料對於預報的影響尚不明顯，可能與資料之使用策略有關。因此，本研究現正進行掩星資料同化的前處理流程的強化，希望透過資料使用策略的改善，以發揮福衛七號掩星資料在區域模式的預報效益。

關鍵字：福衛七號、掩星資料、資料同化

Evaluating the Impact of FORMOSAT-7 radio occultation (RO) data Preprocessing on regional model data assimilation

Ying-Jhen Chen, Wen-Jou Chen, Jing-Shan Hong, Pao-Liang Chang

Meteorological Information Center,

Central Weather Bureau

Abstract

The FORMOSAT-7/COSMIC-2 satellite is a collaborative program between Taiwan and the U.S. and was launched on June 25, 2019. FORMOSAT-7 can provide around 4000 atmospheric profiles in low to medium latitude region per day and among them around 400 to 600 observed profiles are located in CWB regional model domain. How to adapt these data to improve the forecast performance of regional model is our goal and which needs further evaluation. Based on currently data assimilation setting in our model, we conducted assimilative experiments and evaluated the forecast performance of FORMOSAT-7 radio occultation (RO) data. In our primary results, the impact of FORMOSAT-7 RO data to assimilation is minor, which might be related to the data using strategy. Therefore, our study is trying to improve the RO data preprocessing in data assimilation. With better data using strategy, we expect to expand the FORMOSAT-7 RO data influence in regional model forecast.

Keywords: FORMOSAT-7/COSMIC-2, radio occultation (RO), data assimilation