

# CORDEX-REMO動力降尺度於東亞地區模擬結果分析

## An analysis of CORDEX-REMO dynamic downscaling simulation in East Asia

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### 摘 要

本篇研究與德國氣候服務中心(The Climate Service Center Germany)合作，取得CORDEX-REMO在東亞地區執行的三組動力降尺度25公里解析度資料，三組全球模式分別為CMIP5模式中的HadGEM2、MPI-ESM、NorESM。本篇主要以ERA-interim再分析資料校驗基期時段(1979-2005)的季節大尺度環流場，再比較降雨模擬的偏差。同時也利用WRF和REMO區域模式對ERA-interim再分析資料進行動力降尺度模擬，比較兩區域模式的特性與差異。結果顯示，REMO降尺度修正了三組全球模式於東亞的環流偏差，改善了環流的強度和範圍，但在夏季的模擬上卻加深了季風槽的發展。WRF降尺度對於環流場掌握較好，降水模擬有偏少的情形；REMO降雨量較接近觀測值，但是降水分佈和環流位置差異較大。

**關鍵字：**動力降尺度、CORDEX

### Abstract

Cooperated with Climate Service Center Germany (GERIS), Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) gets three dynamic downscaling data sets with 25km resolution conducted by CORDEX-REMO in the East Asia region, where the global models from CMIP5 are HadGEM2, MPI-ESM, and NorESM. We evaluate CORDEX-REMO with the ERA-interim re-analysis dataset by examining the seasonal large-scale circulation and the rainfall simulation in the baseline period (1979-2005).

In order to further investigate the difference of the regional model, REMO and WRF, the ERA-interim reanalysis data were used to conduct dynamical downscaling, and thereby analyze the circulation and precipitation simulation. The result shows that CORDEX-REMO has improved the circulation simulation in East Asia, but it also amplified the monsoon trough in the summer. WRF model has a better simulation result in circulation but an inferior in precipitation, while precipitation in REMO is close to observation data but less accurate in circulation.

**Key words:** dynamic downscaling; CORDEX