

TReAD日較差趨勢分析

Trends in diurnal temperature range in TReAD(Taiwan ReAnalysis Downscaling data)

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摘 要

國家災害防救科技中心執行臺灣氣候變遷推估與調適知識資訊平台計畫(TCCIP)，利用WRF模式將歐洲中期天氣預報中心(European Centre for Medium-Range Weather Forecasts, ECMWF)所產製的ERA5重分析資料進行動力降尺度，產製一組1979至2020年高解析度臺灣歷史氣候資料，資料定名為TReAD(Taiwan ReAnalysis Downscaling data)，目前資料已提供多位使用者進行氣候變遷相關研究。

本研究將著重在日較差的變化趨勢上，分析結果顯示，TReAD和測站資料若以距平的年平均來看，兩者皆呈現下降的趨勢。但是在冬季上兩者有較顯著的差異，測站資料於冬季有最顯著的下降趨勢，TReAD則無，由於日較差呈現下降趨勢的原因為低溫的增溫趨勢大於高溫，但TReAD於冬季的高低溫趨勢無顯著差異，導致TReAD於冬季的日較差無顯著趨勢。

關鍵字：日較差

Abstract

National Science & Technology Center for Disaster Reduction(NCDR) has executed Taiwan Climate Change Projection Information Platform (TCCIP) plan, and the current study conducted dynamic downscaling by forcing the Weather Research Forecast model (WRF) with the global reanalysis ERA5 from the European Centre for Medium-Range Weather Forecasts (ECMWF) to reconstruct historical climate data in Taiwan from 1979 to 2020. This data set is named TReAD (Taiwan Re-Analysis Downscaling data) and is available for climate change studies in Taiwan now.

This study focuses on diurnal temperature trends. The result shows that both TReAD and observation data have a decreasing trend in the annual average. To be more specific, observation data depicts a decreasing trend in wintertime, but this feature does not show in TReAD. It is caused by the difference between the maximum and minimum temperature trend is not significant in TReAD in wintertime.