

引用本文(Citation):

吴佳, 高学杰.一套格点化的中国区域逐日观测资料及与其它资料的对比. 地球物理学报, 2013,56(4): 1102-1111,doi: 10.6038/cjg20130406

WU Jia, GAO Xue-Jie.A gridded daily observation dataset over China region and comparison with the other datasets.Chinese Journal Geophysics,2013,56(4): 1102-1111,doi: 10.6038/cjg20130406

一套格点化的中国区域逐日观测资料及与其它资料的对比

吴佳, 高学杰*

中国气象局气候研究开放实验室,北京 100081

A gridded daily observation dataset over China region and comparison with the other datasets

WU Jia, GAO Xue-Jie*

Laboratory for Climate Studies, China Meteorological Administration, Beijing 100081, China

摘要

参考文献

相关文章

Download: [PDF](#) (4026 KB) [HTML](#) (0 KB) Export: [BibTeX](#) or [EndNote](#) (RIS) [Supporting Info](#)

摘要

为高分辨率气候模式检验等的需要,基于2400余个中国地面气象台站的观测资料,通过插值建立了一套 $0.25^{\circ} \times 0.25^{\circ}$ 经纬度分辨率的格点化数据集(CN05.1).CN05.1包括日平均和最高、最低气温,以及降水4个变量.插值通过常用的“距平逼近”方法实现,首先将计算得到的气候平均场使用薄板样条方法进行插值,随后使用“角距权重法”对距平场进行插值,然后将两者叠加,得到最终的数据集.将CN05.1与CN05、EA05和APHRO三种日气温和降水资料(四种资料的分析时段统一为1961—2005年)进行对比,分析了它们对气候平均态和极端事件描述上的不同,结果表明几者总体来说在中国东部观测台站密集的地方差别较小,而在台站稀疏的西部差别较大,相差最大的是青藏高原北部至昆仑山西段等地形起伏较大而很少或没有观测台站的地方,反映了格点化数据在这些地区的不确定性,在使用中应予以注意.

关键词 观测资料插值, 日数据, 气温, 降水, 中国

Abstract:

A new gridded daily dataset with the resolution of 0.25° latitude by 0.25° longitude, CN05.1, is constructed for the purpose of high resolution climate model validation over China region. The dataset is based on the interpolation from over 2400 observing stations in China, includes 4 variables: daily mean, minimum and maximum temperature, daily precipitation. The "anomaly approach" is applied in this interpolation. The climatology is first interpolated by thin-plate smoothing splines and then a gridded daily anomaly derived from angular distance weighting method is added to climatology to obtain the final dataset. Intercomparison of the dataset with other three daily datasets, CN05 for temperature, and EA05 and APHRO for precipitation is conducted. The analysis period is from 1961 to 2005. For multi-annual mean temperature variables, results show small differences over eastern China with dense observation stations, but larger differences (warmer) over western China with less stations between CN05.1 and CN05. The temperature extremes are measured by TX3D (mean of the 3 greatest maximum temperatures in a year) and TN3D (mean of the 3 lowest minimum temperatures). CN05.1 in general shows a warmer TX3D over China, while a lower TN3D in the east and greater TN3D in the west are found compared to CN05. A greater value of annual mean precipitation compared to EA05 and APHRO, especially to the latter, is found in CN05.1. For precipitation extreme of R3D (mean of the 3 largest precipitations in a year), CN05.1 presents lower value of it in western China compared to EA05.

Keywords [Interpolation](#), [Daily data](#), [Temperature](#), [Precipitation](#), [China](#)

Received 2011-11-18;

Fund:

国家重点基础研究发展规划项目(2010CB428401),科技部国际合作重点项目“粮食安全预警的关键空间信息技术合作研究”(2010DFB10030-3),中-英-瑞中国适应气候变化项目(ACCC)共同资助.

Corresponding Authors: 高学杰,男,1966年生,研究员,从事区域气候模拟及气候变化研究.E-mail: gaoxj@cma.gov.cn

Service

- [把本文推荐给朋友](#)
- [加入我的书架](#)
- [加入引用管理器](#)
- [Email Alert](#)
- [RSS](#)

作者相关文章

- [吴佳](#)
- [高学杰](#)

Email: gaoxj@cma.gov.cn

About author: 吴佳,女,1984年生,博士,从事区域气候模拟及气候变化研究.E-mail:wujia@cma.gov.cn

链接本文:

<http://manu16.magtech.com.cn/geophy/CN/10.6038/cjg20130406> 或 <http://manu16.magtech.com.cn/geophy/CN/Y2013/V56/I4/1102>

[查看全文](#) [下载PDF阅读器](#)

Copyright 2010 by 地球物理学报