地球物理学报 » 2009, Vol. 52 » Issue (11) :2698-2703 doi:10.3969/j.issn.0001-5733.2009.11.003
空间物理学★大气物理学★大地测量学

引用本文(Citation):
陈权亮;任景轩;卞建春;朱克云.ECMWF和HALOE平流层温度资料对比. 地球物理学报, 2009,52(11): 2698-2703,doi: 10.3969/j.issn.0001-5733.2009.11.00

CHEN Quan-Liang;REN Jing-Xuan;BIAN Jian-Chun;ZHU Ke-Yun.Comparison study on ECMWF and HALOE temperature data in the stratosphere.Chinese J.Geophys. (in Chinese),2009,52(11): 2698-2703,doi: 10.3969/j.issn.0001-5733.2009.11.003

ECMWF和HALOE平流层温度资料对比

陈权亮[1，2];任景轩[1];卞建春[2];朱克云[1*]

1 成都信息工程学院高原大气与环境研究中心，成都 610225
2 中国科学院大气物理研究所，北京 100029

Comparison study on ECMWF and HALOE temperature data in the stratosphere

CHEN Quan-Liang[1,2]; REN Jing-Xuan[1];BIAN Jian-Chun[2]; ZHU Ke-Yun[1*]

1 Center for Plateau Atmospheric and Environmental Research, Chengdu University of Information Technology, Chengdu 610225, China
2 Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing 100029, China

摘要 | 参考文献 | 相关文章

Download: PDF (2094KB) HTML 0KB Export: BibTeX or EndNote (RIS) Supporting Info

摘要 利用ECMWF和HALOE资料，分析了1991~2002年两种资料中温度垂直廓线、平方差水平分布，并通过线性趋势分析方法分析了平流层不同高度温度变化趋势的差异.研究结果表明：在中低纬度地区，10 hPa以下两种资料中温度垂直廓线非常吻合；10~2 hPa高度，HALOE资料中温度比ECMWF资料中温度要高；1 hPa高度上，两种资料也有比较小的差异.在南北半球的中高纬度地区，温度的差异比较明显，整个平流层中，HALOE资料中温度比ECMWF资料中温度要高.平流层中温度的水平分布差异随着高度而增大.中低纬度地区温度差异相对较小，南北半球50° 以上地区差异比较大.在平流层的中低层100 hPa、50 hPa和10 hPa高度，两种资料中温度的变化趋势一致，但是HALOE资料中温度的递减趋势要更明显.在平流层高层2 hPa，1996年后两种资料中温度的变化趋势相反.本研究将为平流层温度研究的资料选择提供一定的依据.

关键词

平流层， 资料对比， ECMWF资料， HALOE资料

Abstract： The ECMWF and HALOE data from 1991 to 2002 was used to research the stratospheric temperature profile and distribution of temperature difference square. Then the time trends of stratospheric temperature at some altitudes were interviewed through linear trend test. The results obtained show that there are obvious differences between ECMWF and HALOE data. In mid-low latitudes, the temperature profiles are very similar bellow 10 hPa and the temperature from HALOE data is higher than that from ECMWF data in the layer from 10 hPa to 2 hPa. At 1 hPa, there is little difference between them. In mid-high latitudes of both hemispheres, the temperature difference is relatively obvious. The temperature from HALOE data is higher than that from ECMWF data in the whole stratosphere. It can be also found that the temperature distribution difference increases with the altitude in the stratosphere. There is a little difference in mid-low latitudes and clear differences out of 50 degrees in both hemispheres. At 100 hPa, 50 hPa and 10 hPa in the mid-low stratosphere, the temperature trends from HALOE and ECMWF data are very similar, but the decreasing trend is more obvious from HALOE data. At 2 hPa in the upper stratosphere, the trend after 1996, the temperature trends are just opposite. Those results will provide some proofs to stratospheric temperature researches.

Keywords

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
陈权亮
任景轩
卞建春
朱克云