

研究论文

多通道地基微波辐射计在0713号“韦帕”台风登陆前后探测性能及特征分析

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摘要:

利用上海市气象局2007年9月进行的“韦帕”台风探测试验资料和地面常规观测资料,对多通道地基微波辐射计在0713号“韦帕”台风登陆前后探测性能及特征进行了分析。结果表明:多通道地基微波辐射计探测的温度和相对湿度趋势与GPS探空得到的基本一致,尽管二者之间存在一些小的差异,但也表明了微波辐射计对台风具有一定的探测能力。0713号“韦帕”台风登陆前后温度和水汽密度场上,甚短生命史的冷暖气柱和高水汽密度柱十分活跃,体现了“韦帕”台风登陆前后的阵性特征。

关键词: 超强台风“韦帕”;微波辐射计;水汽密度

Performance and Characteristics Analysis of a Multi-wavelength,Ground-based Microwave Radiometer before and after 0713 typhoon “Wipha” landfall

Abstract:

Using typhoon “Weipa” exploring experiment data and the basic observations during September of 2007 from Shanghai Meteorological Bureau, detection performances of multi-channel ground-based microwave radiometer and the relative characteristics of No. 0713 typhoon Weipa before and after its landing are investigated. Results suggest that trends of temperature as well as relative humidity before and after Weipa landing detected by multi-channel ground-based microwave radiometer are in substantial agreement with those from GPS sounding if minor differences between them are neglected, which proves that microwave radiometer has the ability of typhoon detection. In addition, features of sudden outbursts of Weipa landing are detected by microwave radiometer with active shot-lived cold or warm atmospheric column on temperature field and atmospheric column with high water vapor density on vapor field during the landing of Weipa.

Keywords: Super strong typhoon “Wipha” Microwave radiometer Vapor density

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