

[首页](#)[期刊简介](#)[编委会](#)[投稿须知](#)[征稿简则](#)[期刊评价](#)[相关下载](#)

叶爱芬, 伍志方, 李怀宇. 一次广州大暴雨的环境条件及中小尺度特征分析. 气象科学, 2012, 32(2):202-209 YE Aifen, WU Zhifang and LI Huaiyu. Analysis on environmental conditions and meso-microscale characteristics of a rainstorm in Guangzhou. Journal of the Meteorological Sciences, 2012, 32(2):202-209

一次广州大暴雨的环境条件及中小尺度特征分析

Analysis on environmental conditions and meso-microscale characteristics of a rainstorm in Guangzhou

投稿时间: 2010-10-19 最后修改时间: 2010-12-17

DOI: 10.3969/2012.jms.0011

中文关键词: [大暴雨](#) [地面能量锋区](#) [中尺度辐合系统](#)

英文关键词: [Rainstorms](#) [Surface energy front](#) [Mesoscale convergence system](#)

基金项目: 广东省科技厅社会发展气象领域科技计划项目(200907)

作者	单位	E-mail
叶爱芬	广州中心气象台, 广州 510080	ye_aifen@163.com
伍志方	广州中心气象台, 广州 510080	
李怀宇	广州中心气象台, 广州 510080	

摘要点击次数: 39

全文下载次数: 21

中文摘要:

基于常规观测资料、NCEP $1^{\circ} \times 1^{\circ}$ 再分析资料和广州多普勒天气雷达资料,对2010年5月14—15日广州大暴雨的环境条件、散度涡度场和中小尺度特征等进行了分析。结果表明:大暴雨过程中低层辐合高层辐散,促进气旋式涡度增加,上升运动增强,反之亦然;中层波动使得中低层辐合和中高层辐散更加深厚,进一步增强上升运动。粤西南暖湿气流北上受弱冷空气阻挡在广东省中北部地区堆积,为大暴雨提供水汽和能量。南下的弱冷空气和日变化共同形成地面强能量锋,与辐合线和低层切变线组成强有力的触发抬升机制。大暴雨期间多普勒天气雷达及时捕捉到逆风区、弱中气旋、中尺度辐合带和两次中层波动影响,分别对应两个强降水时段。

英文摘要:

Based on the conventional observational data, NCEP $1^{\circ} \times 1^{\circ}$ reanalyzed data and Doppler weather radar data, the environmental conditions and meso-microscale characteristics of the torrential rainfall in Guangzhou during May 14-15 were analyzed. The results showed that strong convergences at lower levels and strong divergence at upper levels contributed to enhance of cyclonic vorticities and ascending motions, or vice versa. Middle level fluctuations also helped strengthen convergence at low-middle levels, divergence at high-middle levels and then the ascending motion. High energy airs from southwest of Guangdong were hindered by cold airs and blocked in the middle and northern parts of Guangdong to provide water vapor and energies for rainstorms. The strong surface energy front formed by weak cold air advancing south and its daily variation, combined together with surface convergence line and wind shear line at low levels provided strong trigger mechanisms jointly. Doppler weather radar could detect the adverse wind regions, weak meso-cyclone, meso-scale convergence line and twice middle-level fluctuations, which are easier to reveal two precipitation stages.

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

关闭

版权所有:《气象科学》编辑部 苏ICP备11033607号

地址:南京市北极阁2号 电话:025-83287066 邮箱:qxkxbjb@126.com 邮政编码:210008

技术支持:北京勤云科技发展有限公司

访问网站总数:101325