气象与环境学报 2006 22 (2): 38-41 ISSN: 1673-503X CN: 21-1531/P

简报

2004年8月3日大连大暴雨天气过程分析

黄振,宋煜,何玉科

大连市气象台 大连116001

收稿日期 2005-5-30 修回日期 2005-8-30 网络版发布日期 接受日期

摘要 运用常规天气图资料,并借助地面自动站和多普勒雷达等资料,综合分析了2004年8月3日大连地区出现的一次大暴雨天气过程。结果表明:有利的大尺度环流场,高、低空急流在大连地区的耦合,在提供了充沛的水汽能量的同时,华北北部强度适宜的冷空气的侵入,直接导致垂直上升运动加强。强高空辐散场与低层辐合中心叠置,高层正涡度不断向下输送,导致地面低值系统发展加强,是产生大范围强降水天气的主要原因。同时,垂直运动的发展,促使中γ尺度气旋的活跃活动使得暴雨过程中的降水强度得到显著加强,也是暴雨强度增强的主要原因。

关键词 暴雨 高空急流 低空急流 综合资料分析

分类号

A case study on weather process of "8.3" heavy storm in Dalian region

HUANG Zhen SONG Yu HE Yuke

Dalian Meteorological Observatory;Dalian 116001

Abstract A heavy storm weather process in Dalian region on Aug.3th,2004 was discussed in terms of the data from general weather map and automatic weather observation station as well as Doppler radar.The results indicated that the advantageous large-scale circulation field and the coupling of upper and lower air jets in Dalian region as well as the invasion of cold air from the northern part of North China with suitable intensity would directly result in the enhancement of vertical updraft motion.The main reason resulting in large-scale precipitation weather was the development and enhancement of the surface low pressure system,which was caused by the overlapping of upper air divergence field with high intensity and lower air convergence field with high intensity as well as continuously downward transport of the upper positive vortex.In addition,the development of vertical motion also improved the cyclonic activity with γ scale,and would strengthen the intensity of precipitation.

Key words Heavy storm Upper level jet Low level jet Comprehensive analysis

DOI:

通讯作者