[1]张新主,章新平,张剑民,等.1999-2008年湖南省暴雨特征分析[J].自然灾害学报,2011,01:19-25.

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1999-2008年湖南省暴雨特征分析(PDF)

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Title: Characteristic analysis of heavy rainfall in Hunan Provincefrom 1999 to 2008

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关键词: 暴雨总日数; 日暴雨降水; 地形; 低空气流; 水汽通量散度; 湖南省

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摘要: 分析了1999-2008年湖南省暴雨的时空特征,并从地形和低空气流、水汽条件等方面分析了该省暴雨时空分异的原因.分析结果表明:(1)春季和夏季暴雨总日数较多;春季,湖南东部的西北、中部和西南部暴雨日数较多,且东部比西部暴雨总日数多;夏季西北和东南暴雨日数较多;秋季,东部暴雨总日数比西部多;冬季,暴雨分布在岳阳-益阳、株洲北部-衡阳北部-永州北部-邵阳南部这两条西南-东部走向的带状区域.(2)春季,湖南北部和西部日暴雨降水较多;夏季,湖南山区日暴雨降水较多,日暴雨降水从东南至西北呈"多-少-多"的带状分布.秋季,在临湘-平江-长沙县、长沙市域、望城-湘潭-衡山-衡阳市域-祁东-祁阳、永州市、双牌-蓝山、临武、嘉禾这一带状区域暴雨日平均降水较多;冬季,株洲北部-衡阳北部-永州北部邵阳南部一带的平均日暴雨降水较多.(3)冷暖气流交汇、山地对暖湿气流阻挡以及山地有利于湖南平原地区暖气团维持是该省暴雨时空分布一个重要原因.(4)春季和夏季水汽条件相对秋季和冬季充足,导致春季、夏季暴雨比秋季和冬季暴雨要多.

Abstract: This paper analyzes the temporal and spatial characteristics and causes of heavy rain in Hunan Province.The spatial-temporal variation of heavy rainfall in Hunan was discussed with the terrain and low-flow,water vapor conditions.The results show that:(1)There is more heavy rain in spring and summer than in autumn and winter.During spring,total heavy rain days in northwest of east,in middle part and in Southwestern are more,and total heavy rain days in the east are more than

that in west;during summer,total heavy rain days of northwest and southeast are more,and more-less-more banded distribution is from the southeast to the northwest;in fall,the total number of days of heavy rain in east,west are more than that in other regions;during winter,heavy rain only exists in two southwest-southeast belts: Yueyang-Yiyang belt and North Zhuzhou-North Hengyang-Yongzhou North-Shaoyang belt.(2) during spring,daily heavy rainfall of north and west are heavier than that of the other regions;during summer,mountain regions has much heavy rainfall than other regions,the spatial distribution of daily heavy rainfall is with "more-less-more" belt from the southeast to the northwest.In fall,the belt along Linxiang-Pingjiang-Changsha County,Changsha City,Wangcheng-Xiangtan-Hengshan-Hengyang-Qidong-Qiyang,Yongzhou,Shuangpai-Lanshan,Linwu,Jiahe has much heavy rainfall.During winter,Northern Zhuzhou,Northern Hengyang,northern Yongzhou and southern Shaoyang have much heavy rainfall.(3) Convergence between cold air and warm air,mountain blocking to the warm air and mountain maintaining a warm air mass over plain regions in Hunan is important causes leading to different temporal and spatial distribution.(4) Moisture during spring and summer are much abundant than during autumn and winter,which made that heavy rain during spring and summer are more than that during autumn and winter.

参考文献/REFERENCES

[1] Tao Shiyan,DingYihu.Observational evidence of the influence of the Qinghai-Xizang(Tibet)Plateau on the occurrence of heavy rain and severe convective storms in China[M].Bull.Amer.Meteor.Soc.,1981.
[2] 陶诗言,等.中国之暴雨[M].北京:科学出版社,1980.
[3] 丁一汇.1991年江淮流域持续性特大暴雨研究[M].北京:气象出版社,1993:255.
[4] 国家气候中心.1998年大洪水和气候异常[M].北京:气象出版社,1998:139.
[5] 张家诚,周魁一,杨华庭,等.中国气象、洪涝、海洋灾害[M].长沙:湖南人民出版社,1998.
[6] 张雁,丁一汇,马强.持续性梅雨锋暴雨的环流特征分析[J].气候与环境研究,2001,6(2):161-167.
[7] 鲍名,黄荣辉.近40年我国暴雨的年代际变化特征[J].水科学进展,2005,16(3):460-467.
[8] 夏茹娣,赵思雄,孙建华.一类华南锋前暖区暴雨中尺度系统环境特征的分析研究[J].大气科学,2006,30(5):988-1008.
[9] 王龙学,寿绍文,杨金虎.长江中下游地区汛期暴雨频次的时空分布特征[J].长江流域资源与环境,2006,15(4):541-545.
[10] 徐枝芳,党人庆,葛文卫,等.卫星资料在暴雨数值模拟中的应用研究[J].大气科学,2006,30(6):1057-1067.
[11] 黄小玉,陈媛,顾松山,等.湖南地区暴雨的分类及回波特征分析[J].南京气象学院学报,2006,29(5):635-643.
[12] 毛冬艳,周雨华,张芳华.2005年初夏湖南致洪大暴雨中尺度分析[J].气象,2006,32(3):63-70.
[13] 丁一汇.高等天气学[M].北京:气象出版社,2005:585.

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