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## 近50年北京地区主要灾害性天气事件变化趋势(PDF)

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Title: Change trend of extreme weather events in Beijing area in recent 50 years

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摘要: 应用1958-2008年逐日气象观测资料,对北京地区的几种主要灾害性天气事件进行了统计分析。结果表明:(1)各种灾害性天气事件的发生频率与强度均具较大的年际变化特征,高温事件的分布为双峰型结构,1990年代以来为高温多发期,年极端高温强度及连续高温日数均有增加的趋势,低温事件的变化趋势则正好相反;(2)强对流天气事件如暴雨、冰雹、雷暴日数的下降趋势不明显,但强度有减弱的迹象,大风、沙尘暴、大雾事件下降趋势明显;(3)北京年酸雨日数上升趋势明显,酸雨pH值的变化表明污染日趋严重;(4)北京气候变暖突变发生前后某些极端天气频率和强度表现出明显差异,其突变点相差1~2 a间隔,表明极端事件对于气候增暖变化需要一个响应过程。

Abstract: Based on the daily meteorological observation station data from 1958 to 2008, the trends of extreme weather events in Beijing area were analyzed. Result shows that (1) All kinds of the extreme weather events have remarkable annual change on intensity and frequency. High temperature events and their intensities have a trend of increasing in the last 50 years, which means that, nowadays high temperature events are in a relatively highly-occurred period, while low temperature events are on the contrary. (2) The strong convection events such as rainstorm, hailstone and thunderstorm have no remarkable annual change, but weaken in intensity. Strong wind, sand storm and dense fog events decrease remarkably in the last 50 years. (3) The amount and intensity of the acid rain events increase significantly. (4) There are obvious differences in intensities and frequencies of extreme weather before and after abrupt weather warming, and the abrupt change of extreme temperature indices in the 1990s is 1-2 years later

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than the abrupt temperature change. That is to say, the process of abrupt temperature change might be the intermediate of the extreme temperatures from one stationary period to another stationary one.

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