研究论文

中国极端强降水日数与ENSO的关系

李威[1],翟盘茂[2]

1. 国家气候中心气候系统诊断预测室
2. 中国气象局 预测减灾司

收稿日期 2009-4-28 修回日期 2009-5-20 网络版发布日期 2009-11-30 接受日期 2009-12-23

摘要 利用G分布函数对中国1951-2004年地面台站逐日降水观测资料进行雨日降水量概率分布拟合并定义极端降水事件，在此基础上对极端降水日数与ENSO的关系进行分析研究。结果表明，ENSO对同期的极端降水发生频率在不同地区和不同季节表现出不同的影响作用。总体而言，中国极端降水事件更易发生在厄尔尼诺年的冬春季和拉尼娜年的夏秋季。极端降水在对ENSO强信号的滞后响应上，其发生频率在时空上发生了变化，主要表现为，多数地方更易在ENSO暖位相出现后的半年左右发生极端降水事件。研究表明，ENSO冷暖信号对我国极端降水事件多寡的影响具有不对称性。

Abstract Based on the daily precipitation observation dataset of stations from 1951-2004 in China, gamma function was used to define the extreme precipitation event and calculate the probability distribution of daily precipitation; then, relationship between ENSO and seasonal frequency of extreme precipitation events in China was studied. Results reveal that ENSO events are able to impact China'sextreme precipitation events in different regions, at different seasons. Generally, during winter and spring, extreme precipitation events may come forth in more regions during El Nino events than during La Nina events; while during summer and autumn, the opposite is true. Meanwhile, as for the time-lag relationship between ENSO and extreme precipitation frequency, the extreme precipitation events more easily occur in several regions if the central-eastern tropical Pacific is in ENSO warm phase two seasons ago. Therefore, the impact of El Nino and La Nina on the frequency of China's extreme precipitation events is asymmetrical.

关键词 极端强降水 G分布函数 ENSO Nino 3.4区 海表温度（SST）

分类号

DOI:

通讯作者:
李威 liwei@cma.gov.cn
作者个人主页: 李威[1];翟盘茂[2]