

报告

气候变化下的热和水极端事件

Heat and Water Extremes under Climate Change

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讲者介绍 Biography

李剑锋博士是香港浸会大学地理系副教授及地学计算研究中心主任。

他的研究兴趣包括水文气候、环境变化及水灾害，研究主要集中在气候变化对水文过程及环境的影响，特别是水文及气候极端事件。他是水文领域国际权威期刊 Hydrological Processes 的副编辑，也同时为多个专业团体服务。他的研究在 Nature Climate Change、PNAS、Journal of Hydrometeorology 和 Journal of Geophysical Research: Atmospheres 等权威杂志上发表。



Dr. Jianfeng Li is an Associate Professor in the Department of Geography and Director of the Centre for Geo-computation Studies of Hong Kong Baptist University. His major research interests include hydroclimatology, environmental change, and water hazards, focusing on climate change impacts on hydrological processes and the environment, especially hydrological and climatic extremes. He is an associate editor of Hydrological Processes, an international journal in hydrology, and has been active in serving in various professional communities. His studies have been published in top-tier journals, including Nature Climate Change, PNAS, Journal of Hydrometeorology, and Journal of Geophysical Research: Atmospheres.

报告摘要 Abstract

气候变化改变了不同类型的水文气象因子。本报告的第一部分将介绍气候变化下，考虑了湿度和风速变化的体感温度比单纯气温上升得更快。因为人类对温度的感知不仅决定于气温，也同时受湿度和风速等水文气象因子的影响。基于体感温度定义的极端气温和热不舒适度增加得用气温定义的指标更快。在报告的第二部分，我们将介绍中国沿海的热带气旋移动在过去几十年有变慢的趋势，导致由于总降水量大而引发洪水的风险增加。观测到的移动速度变慢趋势可能有气候变化的成分。未来需要更多的研究来提高人们对热带气旋变化及其成因的认识。

Climate change alters various types of hydrometeorological factors. In the first part of the presentation, we will show that with the consideration of the changes in humidity and wind speed, human-perceived temperature (apparent temperature) increases faster than air temperature under climate change. Human perception of temperature is not only determined by air temperature, but also affected by other hydrometeorological factors such as humidity

and wind speed. Heat extremes and thermal discomfort defined by apparent temperature are expected to increase at a faster rate than those defined by air temperature. In the second part of the presentation, we will show that the motion of tropical cyclones (TCs) over the coast of China has tended to become slower in the past decades, causing greater risks of floods associated with total rainfall amounts. It is probable that there is a climate change component in the observed slowdown. More future research efforts are needed to understand the change and attribution of TC slowdown.

有兴趣合作之项目 **Interested topics for future collaboration**

Climate change