

Foreword

Heat waves and cold waves are extreme weather events that can have significant impacts on human health, infrastructure and the environment. Heat waves occur when temperatures rise above average for an extended period of time, while cold waves occur when temperatures fall below average for an extended period of time.

Heat waves can lead to heat exhaustion, heat stroke and other heat-related illnesses, especially in vulnerable populations such as the elderly, young children and people with pre-existing health conditions. Heat waves can also worsen air pollution and cause power outages as the need for air conditioning increases. They can also negatively impact agriculture and ecosystems by damaging crops and causing droughts.

On the other hand, cold waves can lead to hypothermia and other cold-related illnesses, especially among people who are not properly dressed for the cold weather. Heat and cold waves can also lead to increased energy consumption as people rely on heating systems to keep warm, which can strain power grids and cause power outages.

As extreme weather events become more frequent and severe due to climate change, it is increasingly important to understand the impacts of heat and cold waves and develop strategies to mitigate their effects. These include improving infrastructure to withstand extreme temperatures, implementing heat warning systems and emergency plans.

In this meteorological monograph titled "Heat and Cold Waves in India: Processes and Predictability", the authors discuss the scientific basis, physical mechanisms and predictability of heat and cold waves. The impacts and adaptability issues are also briefly discussed. This monograph is thus an excellent reference book for students, researchers and policy makers to learn about heat and cold waves in India with up-to-date information and statistics.

I congratulate the authors for bringing out this useful monograph published by the India Meteorological Department (IMD), Ministry of Earth Sciences.

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