Journal of Meteorological Research

Call for Papers

Weather and Climate under Complex Terrain and Variable Land Surfaces: Observations and Numerical Simulations

Under global climate change, weather and regional climate extremes are increasingly notable and frequent. Many studies have emphasized on these extremes. Most studies have focused on the effects of the ocean, such as sea surface temperatures (SSTs) and the El Niño–Southern Oscillation (ENSO). Relatively less effort has been made so far to study the influences of complex terrain and variable land surfaces (e.g., mountains, glaciers, deserts, coastlines, etc.).

Complex terrain is a critical source of external forcing for weather and climate systems. Variable land surface conditions play essential roles not only in local weather and climate extremes but also in global climate change. In addition, owing to uncertainties in the representation of terrain, surface characteristics, and soil states (e.g., soil moisture and soil temperature) in numerical models, as well as severely inadequate observations, accurate weather forecasting/climate prediction is difficult using numerical models over complex topography and landforms. Drought, desertification, glacial melting, etc., and their effects on weather and regional climate are not clearly understood, thus becoming a challenging issue.

This special issue aims to collect the newest research results in the areas of weather and climate extremes under the influence of complex terrain and variable land surfaces and also to arouse further attention to related studies from the interested science community.

Papers for this special issue are solicited for, although not limited to, the following topics:

• Observations, numerical simulations, and prediction of high-impact and extreme weather and climate events over complex terrain and variable surface conditions;
• Observations and numerical simulations of terrain-induced severe precipitation and weather phenomena;
• Urbanization effects on extreme heavy rainfall events;
• Observations, numerical simulations, and assessments of the formation and evolution of droughts and drought disasters;
• Impacts of changes in land use and land cover on high-impact weather and climate extremes;
• Effects of desertification and glacial melting on regional weather and climate;
• Influences of soil moisture and surface fluxes on extreme weather and climate.

Contributions from authors in and out of China are encouraged. Publication charges for innovative, well-written papers will be waived, pending the scores and comments of the editor and reviewers. Three best papers will be selected and awarded certificates and cash prizes.
Editors-in-Chief for the Special Issue:

Zhaoxia Pu (University of Utah, USA), Zhaoxia.Pu@utah.edu

Dr. Zhaoxia Pu is a professor in the Department of Atmospheric Sciences, University of Utah, USA. She has expertise in atmospheric data assimilation, numerical modeling, and predictability, with particular areas of interests including advanced data assimilation methods for satellite and radar observations, coupled land-atmospheric data assimilation, observing system simulation experiments, targeted weather observations, mesoscale convective systems, hurricanes, precipitation, and atmospheric boundary layer over complex terrain. Dr. Pu is an editor for Weather and Forecasting and Journal of Meteorological Research.

Yihui Ding (National Climate Center, China), dingyh@cma.gov.cn

Prof. Yihui Ding is an academician of the Chinese Academy of Engineering. He is also a professor and special adviser on climate change of the China Meteorological Administration. Now he is vice-chairman of the China Expert Panel on Climate Change. Prof. Ding has a number of achievements, and has made outstanding contributions to climate change studies. He published numerous papers and several award-winning books on monsoon, climate change and prediction, and severe weather systems. He is currently the Editor-in-Chief for the Journal of Meteorological Research.

Rucong Yu (China Meteorological Administration, China), yrc@lasg.iap.ac.cn

Dr. Rucong Yu is a deputy administrator and senior scientist of the China Meteorological Administration (CMA). He obtained his Ph.D. from Institute of Atmospheric Physics (IAP), Chinese Academy of Sciences in 1992. He was promoted as a senior research scientist of IAP in 1999, then moved to CMA in 2005. From 1999 to 2016, Dr. Yu won numerous awards from the Chinese government for his outstanding contribution to both science and administration. His research interests cover very broad areas in weather and climate. He has published over 190 research articles, including more than 90 in SCI(E) journals. Dr. Yu is now Co-Editor-in-Chief for the Journal of Meteorological Research.

Guest Editors:

- Deliang Chen, University of Gothenburg, Sweden, deliang@gvc.gu.se;

Dr. Deliang Chen is a professor in physical meteorology at the University of Gothenburg, Sweden. He is an internationally renowned climate researcher and has made important contributions to understanding regional climate changes in Sweden and China. He is an elected member of the Royal Swedish Academy of Sciences. He has served on numerous international and national committees and boards. Recently, he was awarded the International Scientific Cooperation Prize of
the Chinese Academy of Sciences. He was a Lead Author of the IPCC’s Fifth Assessment Report, and also serves as editor for several international journals.

- **Jian-Hua Qian**, *University of Massachusetts Lowell, USA*, JianHua.Qian@uml.edu;

  Dr. Jian-Hua Qian is an associate professor in atmospheric and climate Science in the Department of Environmental, Earth, and Atmospheric Sciences at University of Massachusetts Lowell, USA. He has expertise in regional weather and climate modeling over North and South America, and East, South, and Southeast Asia. He is also experienced in mesoscale precipitation processes, land–atmosphere interaction, global nonhydrostatic atmospheric model development, and theory of atmospheric nonhydrostatic normal modes.

- **Zhiqiu Gao**, *Institute of Atmospheric Physics, Chinese Academy of Sciences, China*, zgao@mail.iap.ac.cn;

  Dr. Zhiqiu Gao’s research and academic teaching focus on boundary layer meteorology and his current research interests lie in development of turbulent flux algorithm for numerical weather and climate models. He was an editor for *Advances in Atmospheric Sciences* during 2006-2012 and *Atmospheric and Oceanic Science Letters* during 2008–2012. Dr. Gao has published more than 100 papers in peer-reviewed journals.

- **Yaohui Li**, *Institute of Arid Meteorology, China Meteorological Administration, China*, li-yaohui@163.com;

  Dr. Yaohui Li is the director and senior research scientist at the Lanzhou Arid Meteorological Institute. His primary research interests include arid climate change, drought formation/observation and prediction, field experiments, land-atmospheric interaction, water resources, and weather modification over arid and semi-arid areas. He has published nearly 100 research articles. He has also won many awards from the Chinese government in recent years for his important contribution.

- **Yong Wang**, *Central Institute for Meteorology and Geodynamics, Vienna, Austria*, yong.wang@zamg.ac.at;

  Dr. Yong Wang is a senior scientist at the Zantralanstalt für Meteorologie und Geodynamik (ZAMG), Austria. His main research interests are mesoscale and convective-scale NWP, ensemble prediction, high impact weather study, and nowcasting, in particular, over complex mountains. He is serving as an editor for the journal “Meteorologische Zeitschrift” of Austrian, German and Swiss Meteorological Societies.

- **Huqiang Zhang**, *Australian Bureau of Meteorology, Australia*, huqiang.zhang@bom.gov.au;

  Dr. Huqiang Zhang is a senior research scientist at the Research and Development Branch of the Australian Bureau of Meteorology. His main research area includes climate physics and dynamics, climate change modeling and uncertainty studies, impacts of land-surface processes on weather and
climate modeling and prediction, and potential applications of land-surface models for drought monitoring and water resource management. He lead-authored 35 SCI journal papers.

- **Jing Zhang,** *North Carolina Agriculture and Technical State University, USA*, jzhang1@ncat.edu;

  Dr. Jing Zhang, Associate Professor of Atmospheric Sciences at the Department of Physics and Department of Energy and Environmental Systems, North Carolina Agriculture and Technical State University. Jing Zhang’s research interests lie in regional climate and weather studies using numerical modeling and data analysis. Specifically, her recent and ongoing research studies include: mesoscale wind field study over complex topography in the Arctic; data assimilation and its application for regional reanalysis over the Arctic marginal ice zone; vegetation–land–air interactions and climate impacts of greening north; surface mass balance modeling for the Antarctic Peninsula, etc.

- **Xiangdong Zhang,** *University of Alaska, Fairbanks, USA*, xdz@iarc.uaf.edu.

  Dr. Xiangdong Zhang is a professor at the Department of Atmospheric Sciences and International Arctic Research Center, University of Alaska Fairbanks. He has conducted integrative researches on northern high and mid latitude climate variability and changes, including atmospheric circulation dynamics, water and energy cycle, storm track dynamics, atmosphere–sea ice–ocean interactions, and extreme climate, weather, and hydrology events. He has published a number of papers in journals such as *Nature Climate Change, Nature Communications, Journal of Climate,* and so on.

**Important Dates:**

Submission open: April 17, 2017
Submission deadline: April 16, 2018
Publication time: As soon as the paper is accepted and edited. The Special Issue in virtual format will be compiled online and the Special Issue in print is available upon request.
Submission gateway: [https://mc03.manuscriptcentral.com/acta-e](https://mc03.manuscriptcentral.com/acta-e)

*Journal of Meteorological Research* (JMR), formerly *Acta Meteorologica Sinica,* is published internationally by the Chinese Meteorological Society and Springer Nature. JMR intends to promote the exchange of scientific and technical innovation and thoughts between Chinese and foreign meteorologists. It covers all fields of meteorology, including observational, modeling, and theoretical research and applications in weather forecasting and climate prediction, as well as related topics in geosciences and environmental sciences.

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Journal of Meteorological Research
Co-Editors-in-Chief: Ding, Y.; Li, T.; Peng, M.S.; Weng, F.;
Yu, R.; Zhang, R.; Yi, L.
ISSN: 2095-6037 (print version)
ISSN: 2198-0934 (electronic version)
Journal no. 13351