

IGU Commission/Task Force report for 2019-20

Commission on Climatology:

2021/03/05

A. Membership

Full Members

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HONORARY MEMBERS:

S. Gregory (U. K.), M. Domroes (Germany), L. Nkemdirim (Canada) and Z. Ustrnul (Poland).

SENIOR MEMBERS:

A. Douguedroit (France), R. Brazdil (Czech Republic), T. Mikami (Japan), N. Tapper (Austria),
R. S. Pulwarty (USA)

B. Meetings

a. The meetings organized in 2019-20

CoC Business Meeting

The CoC business meeting was held on 19 August 2020, from 11.00 pm to 12.00 pm UTC. The meeting was conducted via the Zoom web meeting system due to the influence of COVID-19 instead of meeting in person as originally planned during IGC 2020 in Istanbul. Meeting participants were: CoC SC members: Jun Matsumoto (SC Chair), Hadas Saaroni (Vice-Chair), Zahide Acar, Guillaume Fortin, Francisco Mendoca, Jennifer Salmond, Francisco Mendoca Agnieszka Wypych, Yoshihiro Iijima (Secretary), Observers: Barbaros Gonencgil (Vice President of IGU, Head of LOC 2021 IGC Istanbul), R.B. Singh (Secretary General of IGU)

b. A brief summary of the topics addressed at the meeting

In the CoC meeting held on 19 August 2020, discussions were held regarding 1) the need for replacement for several SC members in 2022, 2) nomination of honorary senior member, 3) list of members of the CoC and/or climatology researchers in each country or region, 4) current situation and additional plans for the 2021 IGC in Istanbul, Turkey, and 5) other upcoming conference and future activity plans. This was the first on-line business meeting organized totally via Zoom.

First, we noted the need for several new SC members to replace retiring members in 2022, and that we would try to find alternative people in the next 12 months. Roger S. Pulwarty who retired in 2020 was nominated as a “Senior member”. As for the 2021 IGC in Istanbul, abstract submission was extended until 11 June 2021. New sessions on COVID-19 were also announced to be open for abstracts. If some of these sessions fit the climatological themes, the SC members were requested to encourage (or invite) others to submit abstracts. The possibility of publishing a special issue on the proposed CoC session in the IGC Istanbul were discussed. If the IGC Istanbul were to be organized only online due to the prolonged COVID-19 situation, establishment of proper online discussion facilities would be needed. Finally, for future plans, proposal of collaboration with other commission(s) in IGU, summer school in conjunction with Paris 2022IGC, and summer program during the IGC Istanbul for early career scientists were proposed.



Photo. An online group photo during the CoC Business Meeting on 19 August, 2020 (UTC).

c. The meetings or other events planned to be held in 2021 and later years

CoC Business Meeting will be held in April or May, and in August 2021 during the Istanbul IGC.

In the Istanbul conference, the Commission on Climatology calls for abstract for the following seven sessions:

1. ANTHROPOSPHERE

Chair: Jun Matsumoto

Co-chair: Barbaros Gönençgil

Description

Anthroposphere which is formed by the coming together of the two words; Anthropocene and Atmosphere. We all know that human are affecting the atmosphere negatively. It affects the natural mixture of the atmosphere. We call the age that we are in, anthropocene as human age. In this age, we can open a session using this link to describe changing atmosphere conditions related with human activities. Air pollution, climate change, atmospheric disasters, extreme meteorological events, and all related topics which in some sense related with human activity can be included in this session. Climate change adaptation will also be included in this session.

2. CLIMATE VARIABILITY AND CHANGE-FROM GLOBAL TO LOCAL SCALES

Chair: Babatunde Abiodun

Co-chair: Yoshihiro Iijima

Description

The earth's climate system is highly variable, both in space and in time. It operates in a wide spectrum of spatial scales, ranging from thousands of kilometers to a handful of meters. Over the past several decades, regions across the globe have experienced substantial climate variability and change, such as warming surface temperature, prolonged droughts, and increased frequency of floods. The variability and change have had profound impacts on the human, ecological, and physical systems. How the ongoing global warming might influence future climate variability at different scales remains unclear because of the associated complex feedbacks. However, reliable understanding of past climate variability and dependable future climate projections on extreme events are crucial for establishing hazard mitigations plans. This session welcomes contributions that improve quantification, understanding and prediction of earth's climate variability across space and time scales through observation data analysis, case studies, and climate modelling studies that provide insights into past, present and future climate variability and change on global to local scale, and synoptic to orbital timescales.

3. MEDITERRANEAN CLIMATE

Chair: Hadas Saaroni

Co-chair: Zahide Acar Deniz

Description

The Mediterranean region located between the subtropics and mid-latitudes, exhibits large climate diversity together with a great social and environmental difference. This region has emerged as the hot spot of global climate change. The session will address questions on the climate of the Mediterranean region, its dynamics, variability, change, and studies of climate related impacts on societies and ecosystems. The session considers

different time scales, from paleoclimate to future model projections as well as connections between the Mediterranean and global climate and highlights of sub-regional hotspots and climate processes.

4. SCIENCE-AND-OBSERVATIONS-IN-SUPPORT-OF-CLIMATE-SERVICES

Chair: Roger Pulwarty

Co-chair: Abdullah Ceylan

Description

The Earth's climate has never been constant; a wide range of variations and changes in space and time, often leading to extremes, is its fundamental characteristic. There is now conclusive evidence of anthropogenic warming over the past century occurring at an unprecedented pace. Its implication – in the increased frequency and intensity of extreme events when combined with existing variability– has elevated concerns about the exposure of both developed and developing communities, economies and ecosystems to climate risk. The resilience of society to increased climate risk depends on our ability to improve and integrate the physical and social science underpinning systems that monitor, research, and issue impact-oriented weather and climate services and the uptake of knowledge into decision-making processes. The Global Framework for Climate Services identifies water, agriculture and food security, health, energy and disaster risk reduction as priority sectors in need of improved climate services at global, regional, national and local scales. The priorities cross the goals of the World Meteorological Organization new reorganization along science, observations and services continuum, the UN Disaster Risk Reduction Sendai Framework and the Sustainable Development Goals. Recognizing these urgent needs, this session will elicit papers on the following topics as linked to the priority sectors above:

- Advancing scientific research for impact-based seamless services climate extremes, variability and change
- Enhancing information management, coordination, and communication across international, national and local scales
- Enhancing capacity (including training) for scientific research and observations along the climate science and services supply chain
- Promoting uptake of science-based climate services in planning, decision-making and policy processes

The session will highlight advances and new opportunities in climatology and geographical research for informing the development and implementation of effective and sustained climate services in a changing environment. While special emphasis will be placed on engaging researchers and practitioners in the Mediterranean Basin, Southern Europe and the Near-East, all relevant papers, especially those drawing lessons from other parts of the world for the region are welcomed.

5. SYNOPTIC CLIMATOLOGY

Chair: Agnieszka Wypych

Description

Atmospheric circulation is unquestionably listed among the fundamental causes of weather and climate. The session is dedicated to all aspects of relationships between large-scale atmospheric circulation and surface climate and environmental variables. Contributions concerning theoretical aspects of circulation classifications development and their application in various tasks (climatological, meteorological, and environmental) and

different scales are particularly welcome as well as submissions on recent climate variability and change studied by tools of synoptic climatology.

6. URBAN CLIMATE

Chair: Jennifer Salmond

Description

Urban areas are growing exponentially both in terms of physical area and population density. More than 70% of the global population is expected to live in urban areas by 2050. As a result, understanding and predicting the unique interactions between urban areas and the atmosphere, at a variety of scales, is critical to ensuring sustainable growth of cities. This is especially true in an era of anthropogenically induced climate changes which maybe both caused by, and enhanced by, urbanization. Such changes have the potential to have a disproportionate impact on urban areas, infrastructure and populations. We therefore invite papers on all aspects of urban climate including (but not limited to): urban air pollution, impacts of extreme weather on cities, urban heat islands and their mitigation, heat stress and urban bio-meteorology, urban design, smart cities and urban energy balances. Papers based on original research from a variety of perspectives (including conceptual, empirical, experimental, theoretical or modelling studies) are welcome.

C. Networking

a. Means, if any, by which your commission has collaborated with other IGU Commissions and Task Forces during 2019-20.

International Conference on AGRICULTURE, FOOD, WATER, BIODIVERSITY AND HEALTH IN CHANGING CLIMATE

The XIV International Geographical Union (IGU)-INDIA held at The University of Burdwan in Bardhaman, West Bengal, India between 6th – 8th March 2020.

This conference is under the auspices of IGU Commissions:

Commission on Biogeography and Biodiversity

Commission on Land Use and Land Cover Change

Commission on Hazard and Risk

Commission on Climatology

Commission on Geo-Heritage

Prof. Jun Matsumoto, Chair of CoC is serving as a member of Advisory Committee.

More information is available on <https://iguburdwan2020.org/>

b. Collaboration, if any, with other IGU commissions or other international, intergovernmental, or inter- and multi-disciplinary groups in 2019-20

None

c. Cooperative efforts, if any, with ISC (International Science Council), and CIPSH International Council for Philosophy and Human Sciences) programs.

None

D. Publications

a. Newsletters, special journal issues, and books published in 2019-20

1) CoC Newsletter 2020 (published in December 2020)

b. The current (accurate) URL of the commission's website.

<http://www.klimat.geo.uj.edu.pl/CoC.htm>

E. Archival Contributions

None