



IGU Commission/Task Force report for 2020-2021

COMMISSION ON CLIMATOLOGY

2022/01/10

A. Membership

Full Members

Chair:

Jun Matsumoto (until August 2021)

Department of Geography,
Tokyo Metropolitan University,
1-1 Minamiosawa, Hachioji, Tokyo 192-0397
Japan
ph: +81 42 677 2596, Fax: +81 42 677 2589
e-mail: jun@tmu.ac.jp

Agnieszka Wypych (since August 2021)

Department of Climatology, Jagiellonian University,
Gronostajowa 7, 30-387 Krakow, Poland
ph: +48 12 6645325
e-mail: agnieszka.wypych@uj.edu.pl

Vice-Chair:

Hadas Saaroni

Department of Geography and the Human Environment,
Porter School of the Environment and Earth Sciences,
Tel Aviv University
P.O.B 39040, Ramat Aviv, 69978 Tel Aviv
Israel
ph: +972 36406470 Fax: +972 3 6406243
e-mail: Saaroni@post.tau.ac.il

Secretary:

Yoshihiro Iijima

Graduate School of Bioresources,
Mie University,
1577 Kurima-machiya-cho, Tsu, Mie 514-8507
Japan
ph: +81 59 231 9354 Fax: +81 59 231 9634
e-mail: yijima@bio.mie-u.ac.jp

Babatunde Joseph Abiodun

Department of Environmental and
Geographical Science,
University of Cape Town
Rondebosch,
South Africa
ph: +27 (0) 216505737,
Fax : +27 21 650 3456,
e-mail: babiodun@csag.uct.ac.za

Zahide Acar Deniz

Department of Geography, Faculty of
Arts and Sciences, Çanakkale Onsekiz
Mart University,
P.O. Box 17100, Canakkale,
Turkey
ph: +90 286 2180018 -1798,
e-mail: zdeniz@comu.edu.tr

Guillaume Fortin

Département d'histoire et de
géographie, Faculté des arts et des
sciences sociales
Université de Moncton, Moncton
Canada
ph: +1 506 858 4364, e-mail:
guillaume.fortin@umoncton.ca

Francisco Mendonça

Federal University of Paraná,
Dep Geografia Centro Politecnico,
Jd. Américas
81531-970 Curitiba,
Brasil
ph : +55 41 3361 3458
e-mail: chico@ufpr.br

Ana Monteiro

Department of Geography,
Porto University
Via Panorâmica s/nº, 4150 Porto,
Portugal
ph: +351 919698402
e-mail: anamt@letras.up.pt

Jennifer Salmond

Faculty of Science, School of
Environment
University of Auckland
Private Bag 92019
Auckland 1142
New Zealand
ph: +64 9 923 8650
e-mail: j.salmond@auckland.ac.nz

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 (Australaria),
R. S. Pulwarty (USA)

B. Meetings

a. The meetings organized in 2020-21

COVID-19 pandemic situation enforced intensive on-line contact as the usual possibility of organizing business meetings during IGU conferences was suspended. Except for time differences, as tested in 2020, in 2021 two on-line Commission business meetings were organized.

CoC Business Meeting 1 – 14th July 2021

The first CoC business meeting was held on 14th July 2021, from 11:00 to 12:00 UTC. The meeting was conducted via the Zoom web meeting system and was devoted mostly to incoming Istanbul Congress (sessions arrangements) and planned Paris 2022 event. Meeting participants were: CoC SC members: Jun Matsumoto (SC Chair), Hadas Saaroni (Vice-Chair), Zahide Acar, Francisco Mendoca, Agnieszka Wypych, Ana Monteiro, Babatunde Abiodun, Yoshihiro Iijima (Secretary), Observers: Barbaros Gönençgil (Vice President of IGU, Head of LOC 2021 IGC Istanbul).

CoC Business Meeting 2 – 19th August 2021

The second CoC business meeting was held on 19th August 2021, from 13:40 to 14:40 UTC during International Geographical Congress Istanbul. The meeting was conducted via the Zoom web meeting system. Meeting participants were: CoC SC members: Jun Matsumoto (SC Chair), Hadas Saaroni (Vice-Chair), Agnieszka Wypych, Babatunde Abiodun, Guillaume Fortin, Yoshihiro Iijima (Secretary).

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

In the CoC meeting held on **14th July 2021**, discussions were held regarding 1) Session program in the Istanbul IGC2021, 2) Session proposals for the coming Paris IGC2022, 3) Selection of a new chair from 2022, 4) Membership renewals, and 5) other upcoming conference and future activity plans.

First, we summarized the Istanbul IGC submissions (29 presentations in total: 12 in Climatology and 17 in Climate Change) and updated sessions chairpersons (also in the following e-mail discussion). As for the session proposal for the IGC2022, a few open suggestions have been made, e.g.: “Extreme hydrometeorological events, their spatial and temporal variability and impact”, “Adaptation measure to extreme temperatures in Urban area”, “Climate and health”, “The role of climate conditions in the COVID dispersion” or “Solar radiation management and climate change mitigation”. Regarding the extended deadline for sessions proposals until October the additional meeting was scheduled.

Regarding the new chair of the CoC Agnieszka Wypych was proposed as the next chair since 2022 and accepted by all CoC members. Membership renewals in 2022 are necessary for Jun Matsumoto, Francisco Mendonça and Ana Monteiro. The nomination of Yoshihiro Iijima was accepted to replace the Asian delegate. Two other candidates will be introduced and accepted before August 2022.

CoC members discussed also the necessity of any book edition or the special issue edited by the commission. The issue will be recognized and hopefully initiated as changing climate conditions are crucial for a wide range of environmental studies.



Photo. An online group photo during the CoC Business Meeting on 14 July, 2021

In the CoC meeting held on **19th August 2021**, discussions were held regarding 1) Session summary of the Istanbul IGC2021, 2) Final session proposals for Paris IGC 2022, 3) Membership renewals, and 5) Joint declaration on the climate and biodiversity emergencies.

We summarized participant activity regarding Istanbul IGC2021 – finally only 16 presentations were given in 4 sessions. For Paris IGC 2022 CoC will submit 7 session proposals – there is a necessity to announce the event and suggested topics to climatological community (e.g. via Climlist) to attract more people and assure interesting presentations. Professor Helena Madureira from Geography Department at Porto University was suggested to replace Ana Monteiro starting from August 2022 – needs the candidate confirmation. CoC decided to approve Joint declaration on the climate and biodiversity emergencies document. Regarding other issues, following the suggestion by Yoshihiro Iijima, Babatunde Abiodun will be applied to become an editor of the Human geoscience section of the on-line Progress in Earth and Planetary Science (PEPS) journal in Japan Geoscience Union (JpGU). Concerning the idea of CoC common publication it will be possible to propose a special issue (SPEPS) on the CoC proposed session(s) in IGC conference in the future (further discussion is needed on this matter).

c. The meetings or other events planned to be held in 2022 and later years

CoC Business Meeting will be held on-line probably in winter or spring to schedule IGU Paris CoC sessions (the date is dependent on the Organizers decisions regarding sessions arrangements) and in a hybrid form in July during Paris IGU Centennial Congress.

For Paris IGU Centennial Congress, the Commission on Climatology calls for abstract for the following sessions:

1. EXTREME WEATHER AND CLIMATE EVENTS

Chair: **Guillaume Fortin**

Co-chair: **Francisco Mendonça**

Description:

Extreme events can affect communities in many ways, depending on whether they bring too much water (flooding) or not enough (drought) for example. Recently researchers have worked to better characterize spatial and temporal climate variability and extremes events in terms of their frequency, duration, and intensity.

Vulnerable communities everywhere are searching for innovative ways to be more resilient and to reduce the negative impact of weather and climate extreme events. This session will present examples of how extreme events can be better either monitored, estimated, modelled, prepared for and/or adapted to.

2. CLIMATE AND HEALTH

Chair: **Francisco Mendonça**

Co-chair: **Ana Monteiro**

Description:

The climate influences human health, directly and indirectly. The WHO (World Health Organization), the WMO (World Meteorological Organization) and the IPCC / AR6, among other institutions, consider, in several of their documents, that there will be an intensification of the occurrence of diseases as a result of present and future global climate changes. The scenarios beckon for a greater record of outbreaks, epidemics and pandemics (as COVID19), both existing and non-comparable diseases, many of them directly related to specific climatic conditions. Communicable diseases (as neglected, for example), chronic and neoplasms, among others, have a geographic distribution that, once evidenced, can contribute to public policies for disease control and prevention. The purpose of this Section of the CoC-IGU is to create opportunities for making contributions to advance knowledge of the relationship between climate and human health. It will be an opportunity to highlight the types of weather and climates on the living conditions of the population, as well as prospect the present and future situations.

3. GEO-ENGINEERING AND CLIMATE CHANGE

Chair: **Babatunde Abiodun**

Description:

The greenhouse gas-induced climate change continues to devastate socio-economic activities globally. The international negotiation on reducing greenhouse gas emissions is slow while the emissions themselves continue to rise. Geoengineering has been proposed as faster solution. Geoengineering is the intentional large-scale modification of the Earth's system to end climate change and reverse global warming. Geoengineering techniques range from sucking carbon dioxide directly out of the atmosphere (e.g., ocean fertilization or afforestation using non-native species) to exerting a cooling influence on the Earth by reflecting sunlight (e.g., putting reflective particles into the atmosphere, putting mirrors in space, increasing surface reflectivity, or altering the amount or characteristics of clouds). The interest in geoengineering techniques is growing as more people seek to understand the possibility of cooling the Earth. However, the deployment of any geoengineering technique requires prior evaluation of the price, efficiency, and potential impacts of the technique. This session welcomes presentations on the physical and socio-economic impacts of geoengineering techniques at any scale.

4. 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 applications in various tasks (meteorological, climatological, and environmental), and

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

5. CLIMATE CHANGE ADAPTATION AND MITIGATION

Chair: **Yoshihiro Iijima**

Description:

Global warming is more than an undeniable fact, but it is occurring at a faster pace than expected. From low latitudes to the polar regions, direct natural disasters such as extreme high temperatures, heatwaves, droughts, and enhanced hydrological cycles such as torrential rains and tropical cyclones significantly impact human life. In this session, we expect to present the case studies of global and regional climate change adaptation and mitigation, taking into account the events that could not have occurred without considering global warming in various world regions. This session welcomes topics on climate-based agricultural transformation, renewable energy, efforts to limit environmental change, and measures against climate disasters based on the climatological background of warming events in each region.

6. URBAN CLIMATE

Chair: **Jun Matsumoto**

Co-chair: **Jennifer Salmond**

Description:

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.

7. CLIMATE VARIABILITY AND CHANGE

Chair: **Zahide Acar**

Co-chair: **Hadas Saaroni**

Description:

Both global and regional climate models predict future change in climate conditions. Such changes, including increase in extreme events, are already being observed worldwide and are attributed to anthropogenic factors. They have far-reaching environmental impact and are among the most serious challenges to society in coping with a changing climate. However, long-term and short-term trends in climate conditions are affected also from natural climate variations. A prominent aspect of our climate is its variability. This variability ranges over many temporal and spatial scales and includes phenomena such as El Niño/La Niña, droughts, multi-year, multi-decade, and even multi-century changes in temperature and precipitation patterns. The purpose of this session is to highlight the importance of climate variability analysis as part of climate change studies and introduce climate variations and changes research in various spatio-temporal scales. Studies dealing with climate variability and trends, from global to the regional scales, are invited to this session.

C. Networking

a. Means, if any, by which your commission has collaborated with other IGU Commissions and Task Forces during 2020-21.

None

b. Collaboration, if any, with other IGU commissions or other international, intergovernmental, or inter- and multi-disciplinary groups in 2020-21

Agnieszka Wypych (representing CoC) and Barbaros Gönençgil (representing IGU together with prof M. Meadows but also CoC as its former member) took part in International Geographical Society Gathering Organised by RSGS in partnership with RGS and IGU on Tuesday 22nd June 2021. The meeting was held to discuss respective and collective responses of geographers to the climate emergency. As the result of the meeting the Join declaration on the climate and biodiversity emergencies was formulated.

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 2020-21

1) CoC Newsletter 2021 (published in December 2021)

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

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

E. Archival Contributions

None