2024 Workshop: CEDAR and Climate Change

Long title
CEDAR and Climate Change
Conveners
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Description

The major impacts across the globe along with numerous scientific assessments underscore the urgency of addressing climate change. There is much that can be done with regard to science, mitigation, and adaptation. This recent article (https://e360.yale.edu/features/climate-change-upper-atmosphere-cooling) highlights a number of climate change studies and concerns in the middle and upper atmosphere and across atmospheric regions. The CEDAR and Climate Change workshop will provide a forum to continue discussion about ways that the CEDAR community might contribute to global efforts to address climate change. Such efforts could include whole atmosphere studies of climate change processes; contributions by the CEDAR community to national and international climate assessment processes; strategies to reduce uncertainties in observations to facilitate their use for longer-term comparisons; identification of aeronomy data sets and techniques that can also provide tropospheric information; and steps that our scientific community can take to mitigate climate change, in our conferences and other practices. We welcome participation from the middle and upper atmospheric research community, as well as the tropospheric climate community, to discuss further ways that our communities might collaborate to advance knowledge of climate science. We also welcome discussion relating to climate impacts, equity and justice; as well as strategies for mitigating and adapting to climate change, promoting civic engagement, and for communicating climate science in educational settings and to the public.

We plan to hold this session using a hybrid format. For more information and to contribute a presentation, please contact one of the workshop organizers.

Agenda

Zoom Link:

https://uwmadison.zoom.us/j/96810403500

1:30 - 1:35 PM Introduction

1:35 - 1:55 PM Ben Santer (invited)
Exceptional stratospheric contribution to human fingerprints on atmospheric temperature

1:55 - 2:07 PM Melissa Varga from the Union of Concerned Scientists(invited)
Science Rising

2:07 - 2:27 PM
Pedrina Terra dos Santos
Climate Center for Open Research and Education – CCORE: A unique resource on climate research at a strategic US location.

Christiano Garnett Marques Brum
Long-term changes detected over the Caribbean Region

2:27- 2:39 PM Dupinder Singh
Long-Term Ionospheric Trends Linked to Earth's Magnetic Field Variations Revealed by Global Ionosonde Data and Empirical Modeling

2:39 - 2:51 PM Michael Hartinger
International Polar Year 2032-2033 concept note and related early planning

2:51 - 3:03 PM Marty Mlynczak (invited)
Requirements for Long-Term Geospace Climate Observations

3:03 - 3:10 PM Chen Wu
Seasonal Dependency of the Solar Cycle, QBO, and ENSO Effects on the Interannual Variability of the Wind DW1 in the MLT Region

3:10 - 3:25 PM
Chih-Ting Hsu
Modeling the influences of changes in Earth’s magnetic field and greenhouse gas concentrations on the climatology of upper atmosphere

Joe Mclnerney
WACCM-X Simulations Under Solar Minimum Quiet Geomagnetic Conditions for the 20th Century and Projections into the 21st Century

3:25 - 3:30 PM
wrap-up and open discussion

Justification

The recent release of major climate assessments, including reports from the Intergovernmental Panel on Climate Change (IPCC), underscores the urgency of addressing climate change. The 2023 IPCC synthesis assessment warns that “Climate change is a threat to human well-being and planetary health (very high confidence). There is a rapidly closing window of opportunity to secure a liveable and sustainable future for all (very high confidence).” The report further explains that “Rapid and far-reaching transitions across all sectors and systems are necessary to achieve deep and sustained emissions reductions and secure a liveable and sustainable future for all. These system transitions involve a significant upscaling of a wide portfolio of mitigation and adaptation options. Feasible, effective, and low-cost options for mitigation and adaptation are already available, with differences across systems and regions. (high confidence),” and that “Prioritising equity, climate justice, social justice, inclusion and just transition processes can enable adaptation and ambitious mitigation actions and climate resilient development.” In summary, “The choices and actions implemented in this decade will have impacts now and for thousands of years (high confidence).” [IPCC 2023 AR6 Synthesis Report; https://www.ipcc.ch/report/ar6/syr/resources/spm-headline-statements/]

This workshop will provide a forum for discussion about ways that the CEDAR community might contribute to global efforts to address climate science.

Related to CEDAR Science Thrusts:
Encourage and undertake a systems perspective of geospace

Fuse the knowledge base across disciplines in the geosciences

Workshop format

Short Presentations

Other

Keywords

Climate Change, Long-Term Trends, Natural Variability

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