2022 Workshop: CEDAR and Climate Change

Long title
CEDAR and Climate Change
Conveners
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Description

This workshop will provide a forum to continue discussion about ways that the CEDAR community can 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. We welcome participation from the tropospheric climate community, as well as the middle and upper atmospheric research community, to discuss further ways that our communities might collaborate to advance knowledge of climate science. We also welcome discussion relating to strategies for mitigating and adapting to climate change and for communicating climate science to the public.

Agenda

CEDAR and Climate Change, Monday, June 20th, 10 AM – noon

Join in-person or virtual via Zoom. The Zoom link will be posted on the CEDAR slack channel #2022-cedar-workshop-updates. You can also email the conveners above to request the link.

10:00 – 10:10 Welcome and overview

10:10 – 10:25 Long-term trends over Jicamarca: Analyzing ionosonde and coherent backscatter data, Kike (Enrique) Rojas Villaba, Cornell University

10:25 – 10:40 Ionospheric climate trends/changes measured by incoherent scatter radars, Shunrong Zhang, MIT Haystack

10:40 – 10:55 Upper Atmosphere 20th and 21st Century Changes from Whole Atmosphere Community Climate Model - eXtended (WACCM-X) Simulations, Joe McInerney, National Center for Atmospheric Research

10:55 – 11:10 Long-term trends in diurnal vertically-propagating atmospheric tides within the mesosphere and lower thermosphere from 1980 to 2020, McArthur Jones, Naval Research Laboratory

11:10 – 11:27 Tales from a Greenhouse Gas Auditor, Kenneth Davis, Penn State University (invited and online)

11:27 – 11:45 Opportunities to Advocate for Science Policy, Brittany Webster, American Geophysical Union (invited and online)

11:45 – 11:58 Questions & Discussion

11:58 – noon Wrap-up

Justification

The recent release of major climate assessments, including reports from the Intergovernmental Panel on Climate Change, underscores the urgency of addressing climate change. In response to the release of the 2021 Intergovernmental Panel on Climate Change report, the United Nations Secretary-General António Guterres said the report was nothing less than "a code red for humanity. The alarm bells are deafening, and the evidence is irrefutable".
He noted that the internationally-agreed threshold of 1.5 degrees above pre-industrial levels of global heating was "perilously close. We are at imminent risk of hitting 1.5 degrees in the near term. The only way to prevent exceeding this threshold, is by urgently stepping up our efforts, and pursuing the most ambitious path.” (https://news.un.org/en/story/2021/08/1097362) We are already experiencing a wide range of extreme weather and other severe climate impacts at our present 1.2 degrees above pre-industrial times. The impacts are significantly worse at 2 degrees than at 1.5 degrees Celsius. “To keep global warming below 1.5°C this century, the world needs to urgently put additional policies and action in

place to almost halve annual greenhouse gas emissions in the next eight years.” UN 2021 Emissions Gap Report.

This workshop will provide a forum for discussion about ways that the CEDAR community might contribute to global efforts to address climate science. The workshop relates to the following thrusts of the CEDAR strategic plan:

Strategic Thrust #3: Explore Processes Related to Geospace Evolution
Strategic Thrust #5: Fuse the Knowledge Base across Disciplines

Related to CEDAR Science Thrusts:
Explore processes related to geospace evolution
Fuse the knowledge base across disciplines in the geosciences
Workshop format
Other
Keywords
Climate Change, Long-term Variability, Whole Atmosphere Studies
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