

2021 Workshop: CEDAR and Climate Change

Long title

CEDAR and Climate Change

Conveners

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Description

International scientific assessments conclude risks of dire consequences of climate change and that the next decade is critical for transformational change to achieve deep reductions in greenhouse gas emissions to avoid the most serious impacts. This workshop continues our conversation about ways that the CEDAR community could contribute to global efforts to address the challenges of climate change. Such efforts may include whole atmosphere studies of climate change processes; identifying aeronomy data sets and techniques that can also provide tropospheric information; continued work to reduce uncertainties in observations to facilitate their use for longer-term comparisons; ways that the CEDAR community is or could potentially contribute to national and international climate assessment processes; collaborating more closely with the tropospheric climate community to identify studies that would be enhanced with knowledge of climate responses at multiple altitudes; and steps that our scientific community can take to mitigate climate change. We will focus this year as well on strategies for communicating climate science.

Agenda

Climate Changes in the Upper Atmosphere: Contributions by the Changing Greenhouse Gas Concentrations and Earth's Magnetic Field - Liying Qian, National Center for Atmospheric Research, High Altitude Observatory

Long-term Trends in the Upper atmosphere using the observations of Incoherent Scatter Radar over Arecibo - Selvaraj Dharmalingam, Arecibo Observatory, Puerto Rico

Long-term trend of water vapor in the middle atmosphere from SABER and SD-WACCM - Wandu Yu, Hampton University

Energy Balance and Long-Term Change in the Upper Mesosphere and Lower Thermosphere (further discussion of CEDAR prize lecture) - Marty Mlynchak, NASA Langley

Every Half Degree Celsius Matters - Brenda Ekwurzel, Union of Concerned Scientists

Project Drawdown Climate Solutions - Rachel Brennan, Environmental Engineering, Penn State University

Discussion: How might the CEDAR community further contribute to global efforts to address climate change?

Justification

The Intergovernmental Panel on [Climate Change 1.5 degree report](#) released in October 2018 concluded risks of dire consequences of climate change and that the next decade is critical for transformational change to achieve deep reductions in greenhouse gas emissions to avoid the most serious impacts. [The United Nations Environment Programme's Emissions Gap Report 2019](#) followed with the warning that "we are on the brink of missing the 1.5°C target and condemning humanity to a future of serious climate change impacts". This workshop will provide a forum for discussion about ways that the CEDAR community might contribute to global efforts to address climate change. The workshop relates to the following thrusts of the CEDAR strategic plan:

Strategic Thrust #1: Encourage and Undertake a Systems Perspective to Geospace

Strategic Thrust #2: Explore Exchange Processes at Interfaces and Boundaries

Strategic Thrust #3: Explore Processes Related to Geospace Evolution

Strategic Thrust #4: Develop Observational and Instrumentation Strategies for Geospace

System Studies. Strategic Thrust #5: Fuse the Knowledge Base across Disciplines

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