2026 Workshop: Multi-decadal Variation

Long title
Multi-decadal Variation
Conveners
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Description

There are many causes of long-term variation in the Earth's atmosphere. Drivers can influence the coupled atmosphere–ionosphere–geospace system over decades to centuries. In the upper atmosphere, for example, the sun is a major source of long-term natural variation. Knowledge of processes at different altitudes and coupling between atmosphere regions can enhance understanding of the complex whole atmosphere system. We welcome discussion of all types of long term variation. Additionally, we welcome participation from people studying the troposphere and other parts of the Earth System, as well as the middle and upper atmosphere. One of the goals is to discuss ways that we might further collaborate to advance knowledge of the whole atmosphere system. One focus of this year's workshop is a discussion of design considerations and requirements for multi-decadal observations and a future Geospace System Observatory. Additionally, we welcome discussion about strategies for education and outreach related to multi-decadal variation. 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

We welcome you to join us in-person or by Zoom.

Multi-decadal Variation Workshop Agenda

Thursday, June 25th, 2026, 4 - 6 PM

Room 102

https://uwmadison.zoom.us/j/91359215812

4:00 - 4:10 PM Welcome, Introductions, and Overview

4:10 - 4:40 PM Ángel Francisco Adames Corraliza (Invited), Tropical Atmospheric Dynamics At Various Timescales, talk & broader discussion

4:40 - 5 PM Sunil Kumar, Coupling Between Long-Term Arctic Surface Variability and the Stratosphere–Mesosphere–Lower Thermosphere System

5:00 - 5:30 PM Marty Mlynczak, Design Considerations for a Future Geospace System Observatory, talk & broader community discussion

5:30 - 5:50 PM Joe McInerney, WACCM-X 20th and 21st Century Simulations and the Effect of Geomagnetic Activity (Kp) on Thermosphere Projections

5:50 - 6:00 PM Wrap-up discussion

Justification

Long term variation impacts all regions of the Earth's system from the surface through the magnetosphere. Understanding underlying physical processes of multi-decadal variations can also help explain variability on shorter timescales. Integrating knowledge from scientists studying different regions and components of the Earth's system enhances our overall understanding of its complexity and response to multi-decadal variation.

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Fuse the knowledge base across disciplines in the geosciences
Workshop format
Short Presentations
Other
Keywords
Multi-decadal Variation, Long-Term Trends, Natural Variability
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