2019 Workshop: Optical calibration

Long title
Calibration, analysis, and uncertainty assessment for optical observations
Conveners
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Description

Accurate calibration is important for inter-comparison of observations, data/model comparisons, and long-term investigations. We invite discussion on a broad range of topics relating to passive optical and lidar observations and their analysis. Possible topics include absolute and relative intensity calibration, wavelength calibration, spatial scale determination, error analysis, correction for scattering within the lower atmosphere, isolation of atmospheric lines of interest, flat field techniques, spectral fitting approaches, and analysis of long term data sets. In addition to reporting progress on calibration and analysis techniques, this workshop provides an opportunity to discuss challenges and gain feedback from other workshop participants. We encourage hands-on demonstrations. In addition, we welcome modelers to discuss use of observations for model-data comparisons, and associated questions and challenges for model validation. We welcome and encourage presentations by students.

Agenda

Calibration in the visible

- Megan Gillies (presented by Jun Liang): TREx spectrograph and STEVE (pdf)
- Matthew Grawe: Fabry-Perot interferometers (pdf)

Calibration in the ultraviolet

- Bruce Fritz: Tri-tip UV sensor (pdf)
- Richard Eastes: GOLD mission (pdf)

Uncertainties in atmospheric states

- Fabio Vargas: Gravity wave parameter uncertainties (pdf)

- Dustin Hickey: Uncertainties in airglow layer height (pdf)
- John Elliott: Comparing Doppler Imager and chemical release winds (pdf)
- Susan Nossal: Characterizing uncertainty to investigate long-term change

Justification

Accurate calibration, analysis, and error assessment provides the foundation for data that can be used to address a range of CEDAR strategic science topics, including coupling in the interaction region between the Earth's atmosphere and the near space environment, lower-upper atmospheric coupling, Sun-Earth interactions, investigation of atmospheric dynamics through combination of observations such as wind measurements, and long-term climatology observations.

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