

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Matthew Kozun, PhD Candidate
Physics & Engineering Physics

TOPIC: *The Aerosol Limb Imager: A Canadian Contribution to a Global Challenge*

DATE: Tuesday January 7th, 2020

TIME: 3:30-4:30 p.m.

PLACE: Physics 103

ABSTRACT:

Satellite based remote sensing allows us to monitor the health of our atmosphere. Global measurements of essential climate variables like ozone, carbon dioxide and stratospheric aerosol are key indicators of the impacts of climate change. The Aerosol Limb Imager (ALI) is a prototype remote sensing optical instrument used to measure aerosol in the upper troposphere and lower stratosphere. This hyperspectral imager follows on the legacy of OSIRIS by making measurements of limb scattered solar radiance with a viewing geometry that has the capacity to dramatically improve the spatial sampling of aerosol on a global scale. ALI uses an acousto-optic tunable filter to scan across the 500 – 1500 nm spectral range with narrow spectral resolution. Paired with a liquid-crystal polarization rotator, measurements are made in two linear polarization states, allowing for detection of cloud structures without the use of any moving parts. These spectral images are used to extract high vertical resolution aerosol extinction profiles. In this work, the second prototype of ALI is presented, detailing the optical design, calibration and characterization of the instrument. Preliminary results from a stratospheric balloon flight are presented. Additionally, the future of ALI is discussed with details of a new prototype currently being developed through a partnership with an industrial partner, which has been proposed as a Canadian contribution to NASA's upcoming Aerosol, Cloud, Convection and Precipitation mission.

Coffee and Cookies will be served in Physics lounge at 3:00 p.m. for those attending the seminar.