

ACADIA UNIVERSITY
EARTH AND ENVIRONMENTAL SCIENCE AND
PHYSICS SEMINAR

**Remote sensing for air quality and climate change
applications: Aeolian (wind-blown) mineral dust in the
Canadian Arctic**

Dr. Aldona Wiacek

Professor, Saint Mary's University

Departments of Environmental Science and Physics &
Astronomy



Thursday, November 14 at 4:00 pm in
Huggins Science Hall 336 (**HSH 336**)

Mineral dust is the most abundant suspended particle (aerosol) in the atmosphere, with significant effects on air quality, weather and climate. As the Arctic cryosphere shrinks, more mineral dust deposits are exposed and the concentration of aeolian (wind-blown) dust in the atmosphere increases, with increased concomitant effects. This talk will review why research on Arctic mineral dust is important (impacts), how remote sensing techniques are used to measure it, what are the remote sensing results, and what are the challenges in both measurement and modelling of dust emission to the atmosphere.

Dr. Aldona Wiacek (she/her) is an atmospheric physicist who is cross appointed in the Departments of Environmental Science and Astronomy & Physics at Saint Mary's University (SMU) in Halifax. She has 20 years of experience in remote sensing of atmospheric trace gases and aerosols (solid or liquid particles suspended in the atmosphere) involved in air quality and climate change, as well as in aerosol-cloud-climate interactions. Her research includes the development of ground- and satellite-based remote sensing instrumentation and data analysis techniques. She has recently established the SMU Atmospheric Observatory (SAO) to characterize atmospheric composition over Halifax and improve our understanding and prediction of atmospheric processes related to air quality and climate. Prior to joining SMU in 2013, Dr. Wiacek helped establish the Toronto Atmospheric Observatory as part of her Ph.D. studies at the University of Toronto. She then researched aerosol-cloud interactions as a Marie Curie Postdoctoral Fellow at the Swiss Federal Institute (ETH) in Zürich. Finally, she held the position of Research Associate (remote sensing of aerosols) at Dalhousie University.