

**SSEC/CIMSS
Seminar**

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**Clouds from MISR: Observations and Modeling
for the Polar Regions**

Clouds have historically been difficult to study in the polar regions. In situ measurements are difficult to obtain in such an extreme climate, and clouds often appear equally bright and cold to the surfaces they cover as viewed from space. However, visible through near-IR observations from the Multi-angle Imaging SpectroRadiometer (MISR), on-board the EOS-Terra satellite, provide new hope for studying these difficult regions. Measurements from MISR show that clouds and snow/ice surfaces have very different view-dependent angular signatures in the radiance field that can be exploited for remote sensing.

The first half of this seminar will focus on observations of the Band-Differenced Angular Signature (BDAS). The second half of this seminar will focus on the use of radiative transfer models to describe MISR observations. An interesting feature in MISR observations at nadir is that clouds can sometimes appear either brighter or darker than an underlying snow surface at nadir. Results from the MODerate resolution atmospheric TRANsmission (MODTRAN) radiative transfer model show that a “transition albedo” exists for clouds over bright surfaces. The transition albedo helps explain why the thinnest clouds in the arctic become the darkest clouds as viewed by traditional satellites.

Wednesday, 22 October 2008

2:30 p.m.

Room AOSS 351