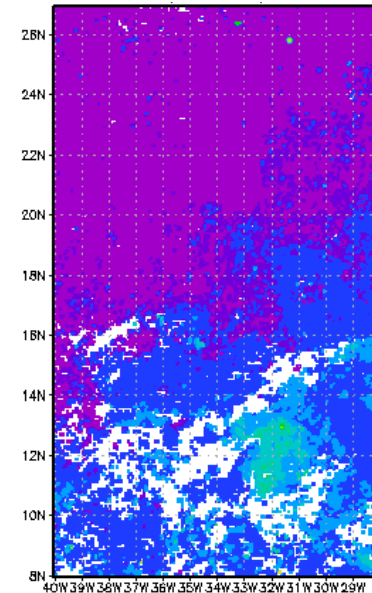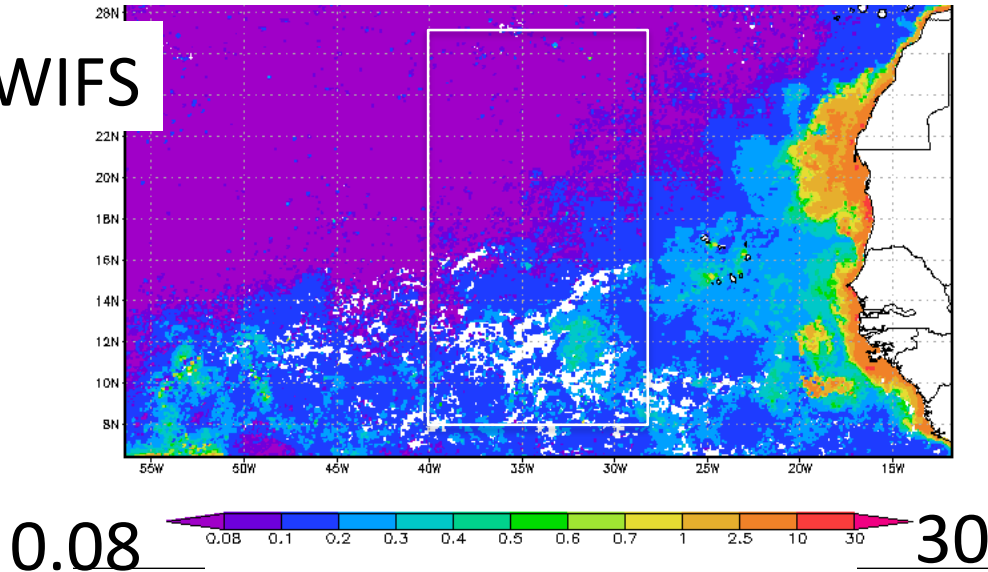# Aerosol absorption retrievals from base-line OCI observations

Lorraine Remer, UMBC
Robert Levy, NASA GSFC
Omar Torres, NASA GSFC
Zia Ahmad, NASA GSFC
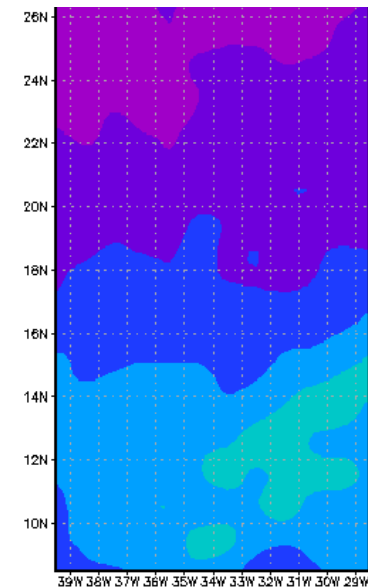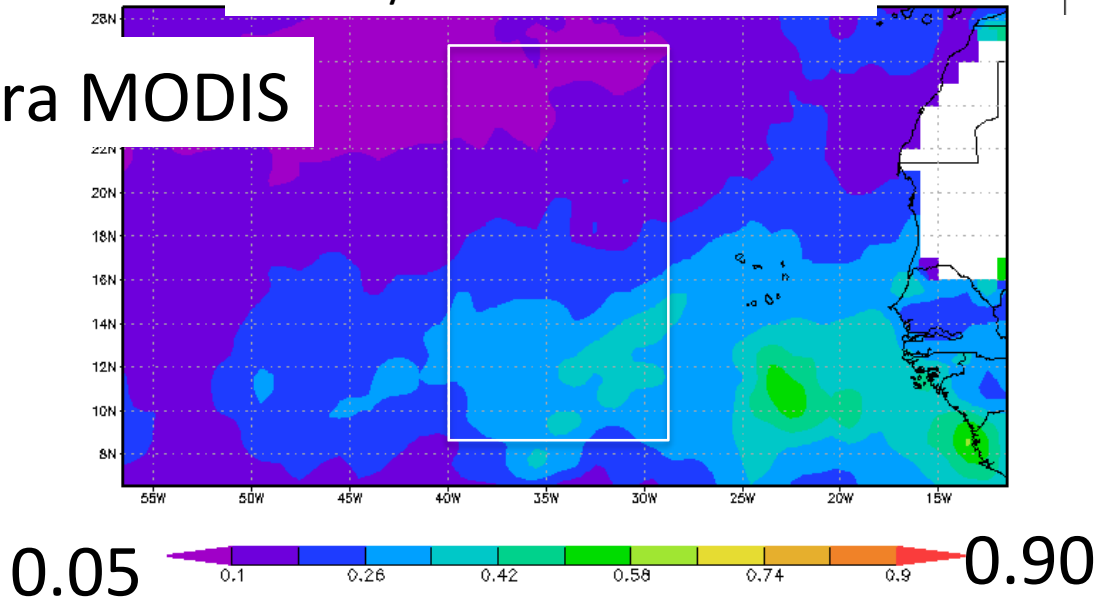Shana Mattoo, NASA GSFC

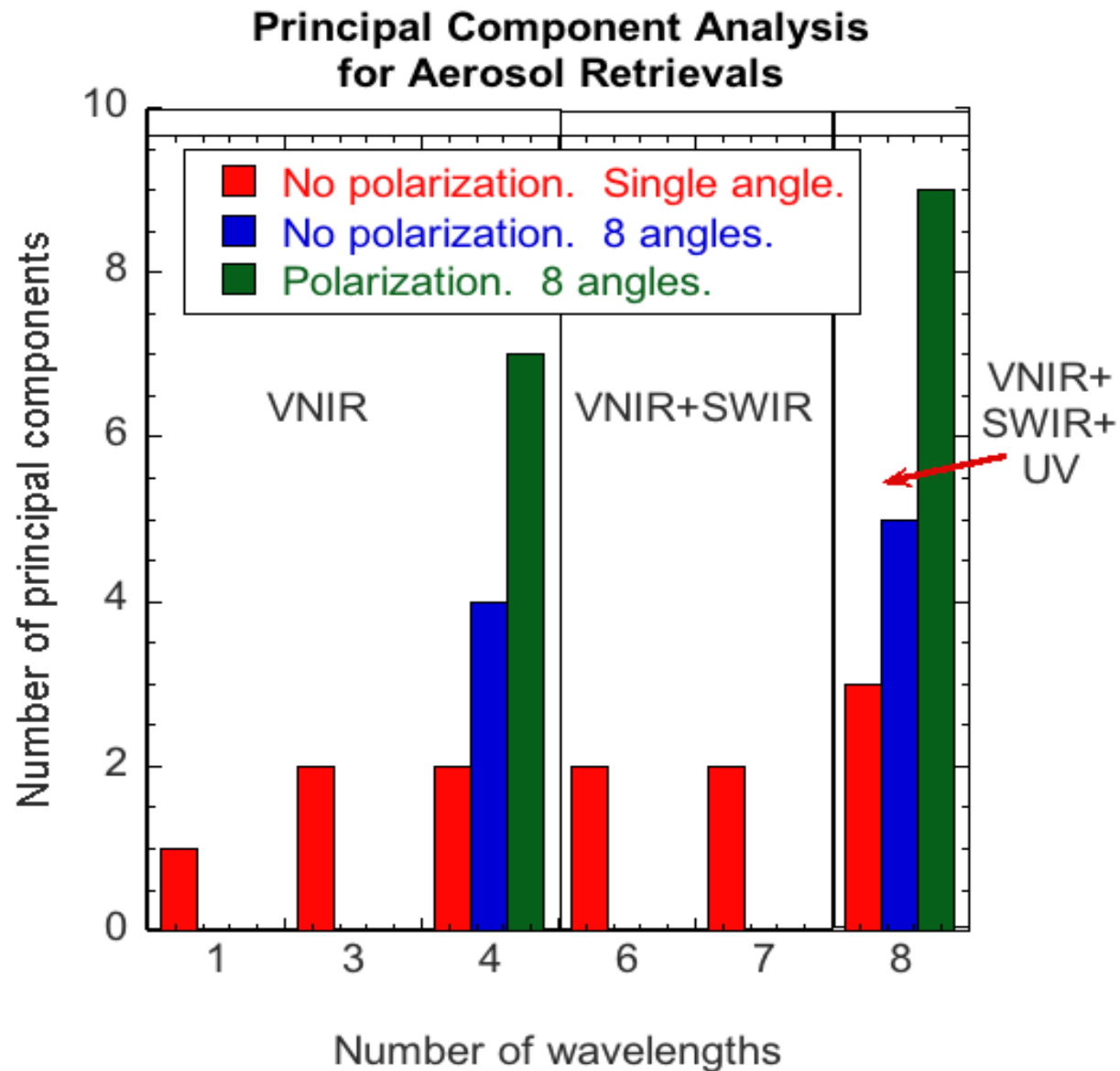November 2007

Monthly mean chlorophyll concentration (mg/m3)

SeaWIFS

0.08 ... 30

Monthly mean AOD at 550 nm

Terra MODIS

0.05 ... 0.90

Plotted from table in Zubko et al (2007).

The overarching objective of the proposed work is to:

Develop algorithms that identify and quantify aerosol absorption using the <u>base-line configuration of OCI.</u>

As a byproduct:

Explore opportunity to retrieve aerosol AOD and quantify aerosol absorption over ocean and land

1. Identify absorbing aerosol with UVAI

$$UVAI = -100\log\left[\frac{L_\lambda^*}{L_\lambda^{cal}}\right]$$

Not trivial, because UVAI is sensitive to ocean color in the UV

2. Produce MODIS-like and OMI-like aerosol products over ocean and land

3. Full spectrum retrieval over ocean

4. Quantify uncertainties (aerosol spectral absorption, aerosol height, wavelength choices, testing in synthetic and real data)

How do we contribute to the group?

- Combined 120 years experience with deriving aerosol with instruments like baseline OCI

- Will focus on baseline instrument, not polarimeter for aerosol characterization

- Address the challenge of absorbing aerosol