

# Saharan Dust and Tropical Convection

## Frontiers in Global Change Seminar Series

### Presented by...

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### Abstract:

The Saharan Air Layer has been observed to influence hurricane development over the tropical Atlantic, and Saharan dust particles have been found within cirrus anvil crystals there. Dust particles are known to act strongly as heterogeneous ice nuclei and have been found to dominate ice crystal residuals in cirrus clouds in the Northern Hemisphere. However, interactions between dust layers and the microphysical and dynamic properties of tropical clouds are not well understood. Additionally, tropical storms themselves may influence the distribution and loading of dust within the atmosphere, with impacts on climate and ocean biogeochemistry. Radiative impacts of heterogeneous dust nuclei will depend on how much of it reaches upper levels in storms.

We studied interactions between Saharan dust and tropical convective systems using airborne measurements and the RAMS cloud-resolving model. Simulations of small storms and tropical cyclones were initialized with actual field data from the NAMMA field program. Dust particles were allowed to act as cloud condensation nuclei and ice nuclei to see how the competing effects manifested. Tracking of dust mass throughout storms was implemented, so the location of dust and how much was removed through precipitation could be assessed. Results are discussed in relation to field measurements of dust in the anvil region, as well as tropical storm development and evolution.

See <http://ceoas.oregonstate.edu/profile/twohy/>

Please join us for a meet and greet opportunity  
with Dr. Twohy after the seminar.  
~Refreshments will be served~

Date: Thursday,  
June 6

Location: EMSL  
Auditorium

Time: 10:00 AM