Background: Dr. David J. Delene received his Ph.D. from the Department of Atmospheric Sciences at The University of Wyoming in December 1998, a M.S. in Geophysics from Michigan Technological University in August 1995, and a B.S. in Applied Physics from Michigan Technological University in May 1993. He was a research assistant at both Michigan Technological University and the University of Wyoming. Dr. Delene spent two years as a Research Associate at the Cooperative Institute for Research in Environmental Sciences in Boulder Colorado working on evaluating uncertainties in satellite retrievals of aerosol optical depth before coming to the University Of North Dakota in 2001. Field projects to measurement aerosol and cloud microphysical properties have taken Dr. Delene to such interesting places as Alaska, Hawaii, New Zealand, West Africa and Saudi Arabia.

Research Interests: Atmospheric aerosols, cloud physics, weather modification, satellite remote sensing of aerosols and clouds, climate change.

Current and Pending Projects: ***Current Research Projects***

Weather Modification Research in Saudi Arabia

The project's goal is to access the enhancement of precipitation due to cloud seeding and to understand the physical processes involved in precipitation development. Dr. Delene's focus is on conducting and analyzing airborne measurements to understand the microphysics of precipitation formation in the Saudi Arabia region. Airborne measurements of aerosol and cloud properties are conducted during several field measurement programs in Saudi Arabia.

Rainfall Enhancement Studies for Mali

The Mali project involves conducting scientific research in association with rainfall enhancement operations conducted by Weather Modification Inc of Fargo, North Dakota. The project involves conducting and analyzing airborne measurements to understand and evaluate cloud seeding for rainfall enhancement. The research goals are to determine the best methods to use for rainfall enhancement in Mali and to collect measurements for an assessment of the effectiveness of cloud seeding in Mali.

Pending Research Projects

Burkina Faso Airborne Measurements: The project provides training on using scientific instruments to make airborne measurements. Airborne measurements made in Burkina Faso as part of an operational cloud seeding project are review to ensure the quality of the data.

Investigation of Crop Harvesting as a Source of Climatically Important Aerosols: The project's hypothesis is that modern crop harvesting in the Midwest United States using harvesting combines is a source of atmospheric aerosols that are of climatic importance which need to be incorporated into atmospheric models. The research objective is to test this hypothesis by conducting measurements during wheat harvesting to quantitatively estimate the climatic importance of atmospheric aerosols resulting from regional harvesting activities.

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