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Educational Background

- Ph.D. Atmospheric Chemistry, 2003, Georgia Institute of Technology
Advisor: W. L. Chameides
Thesis: Iron Mobilization in Mineral Dust and the Possible Effect of Asian Pollution on Carbon-uptake in North Pacific Ocean
- M.S. Environmental Management, 1996, International Center for the Environmental Management and Planning, Tbilisi, Georgia
- Diploma Physics, 1993, Tbilisi State University, Tbilisi, Georgia

Professional Experience

Assistant Professor, North Carolina State University, 2006- present
Visiting Fellow, NASA Goddard Space Flight Center, 2006
Research Scientist II, Georgia Institute of Technology, 2005-2006
Postdoctoral Fellow, Georgia Institute of Technology, 2004

Current Fields of Interest

- Quantification the emissions of biogenic VOCs from marine sources (phytoplankton) and the effects of ocean biological productivity on shallow marine clouds and climate
- Effect of marine biogenic VOCs on air quality in large cities near the coastal regions
- Global scale modeling of micronutrient transport (with the emphases on bioavailable iron) to the oceans using GEOS-Chem and the evaluation of the human impact on marine ecosystem productivity and carbon cycle
- The sensitivities of climate predictions to different chemical mechanisms of SOA formation and dynamics of biosphere-atmosphere exchange
- The sensitivity assessments of aerosol indirect forcing to cloud droplet activation parameterizations, meteorological data and emission scenarios using the NASA Global Modeling Initiative (GMI)
- Application of GCM modeling studies in conjunction with remotely sensed data (MODIS, MISR, CALIPSO) for exploring potentially important interactions between nutrient transport, air pollution, and biogeochemistry, and their effects on ocean productivity, clouds and climate

Refereed Publications

- Meskhidze, N., A. Nenes, W. L. Chameides, C. Luo and N. Mahowald (2007), Southern Ocean Productivity: Fertilization From Above or Below? *Global Biogeochemical Cy.*, 21, GB2006, doi:10.1029/2006GB002711.
- Fountoukis, C., N. Meskhidze, W.C. Conant, R. Bahreini, H. Jonsson, A. Sorooshian, V. Varutbangkul, S. Murphy, R.C. Flagan, J.H. Seinfeld, and A. Nenes (2007), Aerosol – Cloud Drop Concentration

Closure and Droplet Formation Parameterization Evaluation using in-situ Data from ICARTT, *J. Geophys. Res.*, 112, D10S30, doi:10.1029/2006JD007272.

Meskhidze, N., A. Nenes (2006), Phytoplankton and Cloudiness in the Southern Ocean, *Science*, DOI: 10.1126/science.1131779.

Luo, C., N. Mahowald, N. Meskhidze, Y. Chen, R.L. Siefert, A. R. Baker, A. Johansen (2005), Estimation of Iron Solubility From Observations and A Global Aerosol Model, *J. Geophys. Res.*, 110, D23307, doi:10.1029/2005JD006059.

Meskhidze N., A. Nenes, W. C. Conant, J.H. Seinfeld, Evaluation of a new Cloud Droplet Activation Parameterization with In Situ Data from CRYSTAL-FACE and CSTRIFE (2005), *J. Geophys. Res.*, 110, D16202, doi:10.1029/2004JD005703.

Meskhidze, N., W. L. Chameides, and A. Nenes (2005), Dust and pollution: A recipe for enhanced ocean fertilization?, *J. Geophys. Res.*, 110, D03301, doi:10.1029/2004JD005082.

Meskhidze, N., W.L. Chameides, A. Nenes, and G. Chen (2003), Iron mobilization in mineral dust: Can anthropogenic SO₂ emissions affect ocean productivity?, *Geophys. Res. Lett.*, 30 (21), 2086, doi: 10.1029/2003GL018068.

Leclerc, M.Y., N. Meskhidze, and D. Finn (2003), Comparison between measured tracer fluxes and footprint model predictions over a homogeneous canopy of intermediate roughness, *Agr. Forest Meteorol.*, 117 (3-4), 145, doi:10.1016/S0168-1923(03)00043-1.

Non-Refereed Publications

Meskhidze, N., A. Nenes and W. L. Chameides, Dust storm surprise: Pollution can convert airborne iron into soluble form (2006), SOLAS (Surface Ocean Lower Atmosphere Study) News, issue 3.

In preparation

Meskhidze, N., A. Nenes, B. N. Duncan and J. M. Rodriguez, Aerosol - cloud interactions in the NASA GMI: Sensitivity to Meteorology, Emission Scenarios and Aerosol Microphysics.

Sotiropoulou, R. P., A. Nenes, N. Meskhidze, B. N. Duncan and J. M. Rodriguez, Sensitivity of indirect effects to cloud formation parameterization and meteorological fields.

Sotiropoulou, R. P., A. Nenes, N. Meskhidze, B. N. Duncan and J. M. Rodriguez, Sensitivity to aerosol microphysics and emission scenario.

Invited Seminars/Talks

EPA- Research Triangle Park, Durham, North Carolina, October, 6, 2006.

AEROCENTER Forum - NASA-Goddard Space Flight Center, Greenbelt, MD, August 29, 2006.

North Carolina State University, Raleigh, NC, March 16, 2006.

NASA-Goddard Space Flight Center, Greenbelt, MD, June 25, 2004.

Meetings and Symposia

The effect of phytoplankton on clouds in the Southern Ocean: A natural “shiptrack” or “smog chamber”?
Gordon Conference on Biogenic Hydrocarbons & the Atmosphere, Ventura, CA, February 25- April 2, 2007.

Phytoplankton and Cloudiness in the Southern Ocean, American Geophysical Union fall meeting, San Francisco, CA, December 11-15, 2006.

Aerosol Indirect Forcing from the NASA Global Modeling Initiative: Sensitivity to Meteorology, Emission Scenarios and Aerosol Microphysics, American Association for Aerosol Research (AAAR) International Aerosol Conference 2006, St. Paul, Minnesota, September 10-15, 2006.

Aerosol Indirect Climatic Effect Assessments using the NASA Global Modeling Initiative, American Geophysical Union Fall Meeting, San Francisco, CA, 2005.

The Possible Role of Air Pollution in Dust - Fe Mobilization and its Implications to Global C-cycle, ACCESS VIII Colloquium, Yellowstone National Park, Wyoming, September 1-4, 2005 and Gordon Research Conference, Big Sky, Montana, September 4 - 9, 2005.

Southern Ocean Productivity: Fertilization From Above or Below? Dynamic Planet 2005, Cairns, Australia, August 22 -26, 2005.

Evaluation of a new Cloud Droplet Activation Parameterization with In Situ Data from NASA CRYSTAL-FACE and CSTRIFE, AAAR Annual Conference, Atlanta, GA, 2004.

Episodic Dust Passage and Phytoplankton Blooms in North Pacific Ocean, American Geophysical Union, Fall Meeting, San Francisco, CA, 2003.

Modeling the Influence of Different Processes on Iron Solubilization in Mineral Aerosols: From the Gobi Desert to the North Pacific Ocean, American Geophysical Union, Fall Meeting, San Francisco, CA, 2002.

Tracer Measurements and Modeling of Flux Footprint above a Rough Canopy, 23rd Conference on Agricultural and Forest Meteorology, Albuquerque, New Mexico, 1998.

Honors, Awards, and Recognitions

2007 –Early career scientist travel support for Gordon Conference on Biogenic Hydrocarbons & the Atmosphere, Ventura, CA

2006- Goddard Visiting Fellowship, NASA Goddard Space Flight Center

2006- DISCCRS II Symposium Member, Asilomar Conference Center, Pacific Grove, CA

2005 - ACCESS VIII Colloquium Member, Yellowstone National Park, WY

2005 - Travel support from NSF for International Conference Dynamic Planet 2005, Cairns, Australia

2004 - Best graduate journal publication award, Georgia Institute of Technology

2003 - The GRL, 2003 publication was selected as an "AGU Journal Highlight"

2000 - Travel support from AMS for 24th conference on Ag. and Forest Meteorology, Davis, California

1996 - Recognition for outstanding achievement and completion of the president's University Student Exchange (1000-1000) program funded by the United States Information Agency (USIA)

1995 - Presidential scholar, The University of Georgia

1995 - The University of Georgia fellowship from United States Information Agency (USIA) 1995-1996

Teaching Experience

MEA 412: Atmospheric Physics (Spring 2007)

EAS1600: Introduction to Environmental Science (Fall 2001)-Teaching Assistant

EAS1601: Habitable Planet (Spring 2002)-Teaching Assistant

Reviewer

Journal of Geophysical Research (AGU)
Earth Interactions, American Geophysical Union (AGU)
Geochemistry, Geophysics, Geosystems (AGU)
Atmospheric Environment (ELSEVIER)
Atmospheric Chemistry and Physics (ACP)
National Science Foundation (NSF)

Membership in Professional and Honor Societies

American Geophysical Union (AGU)
American Association for Aerosol Research (AAAR)
American Meteorological Society (AMS)