WENGE NI-MEISTER
Professor of Geography and Environmental Science
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EDUCATION

1997	Ph.D., Remote Sensing, Boston University
1994	M.S., Land-Atmosphere Interactions, The University of Connecticut
1992	M.S., Climatology, Chinese Academy of Sciences, P.R. China
1988	B.A., Meteorology, Nanjing Institute of Meteorology, P.R. China

EMPLOYMENT

2014–present Professor, Dept. of Geography and Environmental Science, Hunter College of The City University of   New York, New York, NY

2008–2014 Associate Professor, Dept. of Geography and Environmental Science, Hunter College of The City University of New York, New York, NY

2003–2008 Assistant Professor, Dept. of Geography and Environmental Science, Hunter College of The City University of New York, New York, NY

2001–2003 Assistant Research Scientist, Goddard Earth and Science Technology, The University of Maryland at Baltimore County and NASA Goddard Space Flight Center, Maryland

1999-2001 Research Scientist, Dept. of Geography, The University of Maryland, College Park

1998–1999 Principal Scientist, Raytheon ITSS, Maryland

PROFESSIONAL ACTIVITIES

2020-2023 NASA Global Ecosystem Dynamics Investigation (GEDI) Science Team member
2020-2022 NASA Senior Review of Earth Operating Missions Committee
2020-current Editorial Board of Remote Sensing
2023-current Associate Editor of Frontiers in Remote Sensing

HONORS AND AWARDS

2009-2010 NASA Goddard Visiting Fellowship

RESEARCH GRANTS

ONGOING EXTRAMURAL GRANTS

Fusion of Lidar 3D Vegetation Structure Measurements and a Terrestrial Biosphere Model for Improved Predictions of Current and Future Land Carbon Dynamics. NASA, SMD Bridge Seed Funding Program, PI: Wenge Ni-Meister, $300,000, 07/01/2024 – 06/30/2026.

A Remote-Sensing-Based Bird Friendly Certification System for Sustainable Agroforestry: A Multi-Sensor Approach to Evaluating and Monitoring Avian Habitat Quality, National Aeronautics and Space Administration (NASA) Earth Science Applications: Ecological Conservations Program. PI - Qiongyu Huang (Smithsonian Institution), Co-I/Hunter PI: Wenge Ni-Meister, $188,503 (Hunter's portion), 01/2024-12/2027.

Multi-sensor surface topography and vegetation structure data fusion information system (STV-FIS), National Aeronautics and Space Administration (NASA) Decadal Survey Incubation (DSI) Program. PI: Sassan Saatchi (NASA/JPL), **Co-I/Hunter PI: Wenge Ni-Meiste**r, $143,646 (Hunter's portion), 09/2022-08/2025.

COMPLETE EXTRAMURAL GRANTS

A Geometric Optical Radiative Transfer (GORT) Approach to Quantify Impacts of Ecosystem Structure on Land Carbon Stocks and Fluxes Using GEDI Full Waveforms in a Demographic Dynamic Vegetation Model, National Aeronautics and Space Administration (NASA) GEDI Science Team Program. *PI: Wenge Ni-Meiste*r, Co-I Nancy Kiang, $509K ($394K to Hunter), 1/2021-12/2023.

Snow-Vegetation demography interactions in the boreal snow-albedo feedback in an Earth system model, National Aeronautics and Space Administration (NASA) Interdisciplinary Research in Earth Science Program. *PI: Wenge Ni-Meister*, Co-I Nancy Kiang. $957K ($698K to Hunter), 8/2020-7/2023.

Snow albedo test-bed studies, National Aeronautics and Space Administration (NASA) Terrestrial Hydrology Program. PI: Charles Gatebe, NASA/AMES, **Co-I/Hunter *PI: Wenge Ni-Meiste*r**, ($10K to Hunter), 04/27/2021-10/26/2022.

Fusion of remotely sensed 3Dvegetation structure with a dynamic global terrestrial ecosystem model for improved estimates of carbon stocks and land-atmosphere exchanges, National Aeronautics and Space Administration (NASA) Cryosphere Program, *PI: W. Ni-Meister,* Co-I: N. Kiang, $240,000 ($236.348 to Hunter), 2010-2013.

Fusion of radar and lidar data to map 3Dvegetation structure and biomass, *PI: W. Ni-Meister*, National Aeronautics and Space Administration (NASA) Terrestrial Ecosystem Program, $100,711 ($100,711 to Hunter), 2010-2012.

Ent: A model for terrestrial ecosystem-climate interactions for seasonal to century time scales through coupled water, carbon, and nitrogen dynamics, PI: N. Kiang (PI) *Co-Is: W. Ni-Meister, P. Moorcroft and R. Koster,* National Aeronautics and Space Administration (NASA) Modeling Analysis and Prediction Program, $1500,000 ($300,651 to Hunter), 2006-2009.

Retrieval of vegetation structure and carbon balance parameters using ground based lidar and scaling to airborne and spaceborne lidar sensors, PI: A. Strahler, *Co-Is*: *W. Ni-Meister, C. E. Woodcock and C. Schaaf*, National Aeronautics and Space Administration (NASA) Terrestrial Ecosystem Program, $300,000 ($69,647 to Hunter), 2006-2009.

Integrating NASA Land Information System (LIS) data with EPA nonpoint source water quality assessment decision support tools, *PI: W. Ni-Meister*, National Aeronautics and Space Administration (NASA) Terrestrial Hydrology Program, $90,000 ($90,000 to Hunter),

2004-2007.

Integrated learning of urban environment, ***PI: W. Ni-Meister,*** National Aeronautics and Space Administration (NASA) Education program, $79,909 ($79,909 to Hunter), 2006-2007.

Optimal land initialization for seasonal climate predictions, PI: Paul Houser, ***Co-Is: W. Ni-Meister*** and Jeffery Walker, National Aeronautics and Space Administration (NASA) Ocean, Ice and Climate program, $240,000 ($80,000 to Hunter), 2004-2006.

The Effect of subgrid variability of snow cover in vegetated regions on land-atmosphere interactions, ***PI: W. Ni-Meister,*** National Aeronautics and Space Administration (NASA) Global Water and Energy Cycle, $200,000 ($137,864 to Hunter), 2002-2005.

Education partnership in the NASA EOS higher education alliance project, PI: H. Gong, ***Co-I: W. Ni-Meister*** , National Aeronautics and Space Administration (NASA) Earth Science Research Educations, and Applications Solution Network (REASoN) program, $20,000 ($20,000 to Hunter), 2004-2006.

CUNY INTERNAL GRANTS

Environment and climate impacts of urban land use in New York City: A satellite remote sensing perspective, PI: W. Ni-Meister, CUNY Program for Ecological and Environmental Research (PEER) Award, $30,000, 2004-2005.

Monitoring crop diversification using remote sensing for water and land resources management in the Chao Phraya Delta, Thailand, PI: ***W. Ni-Meister***, The Professional Staff Congress-City University of New York (PSC-CUNY) Research Award, $3,000, 2004-2005.

Remote sensing estimates for vegetation structure and biomass, PI: ***W. Ni-Meister***, The Professional Staff Congress-City University of New York (PSC-CUNY) Research Award, $3,886, 2005-2006.

A Canopy Radiative Transfer Scheme for a Global Dynamic Terrestrial Ecosystem Model, PI: ***W. Ni-Meister***, The Professional Staff Congress-City University of New York (PSC-CUNY) Research Award, $5,970, 2007-2008.

PEER-REVIEWED JOURNAL ARTICLES (* for Ni-Meister's postdoc and students)

*Linares M, ***Ni-Meister W.*** Impact of Wildfires on Land Surface Cold Season Climate in the Northern High-Latitudes: A Study on Changes in Vegetation, Snow Dynamics, Albedo, and Radiative Forcing. Remote Sensing. 2024; 16(8):1461. https://doi.org/10.3390/rs16081461.

Ni-Meister, W., *Rojas, A. and *Lee, S., 2022. Direct use of large-footprint lidar waveforms to estimate aboveground biomass, Remote Sensing of Environment, Volume 280, 2022, 113147, ISSN 0034-4257, https://doi.org/10.1016/j.rse.2022.113147.

Nath, B., A Das, S. Majumder, T. Roychowdhury, ***W. Ni-Meister***, M. M. Rahman, 2022. Geospatial Machine Learning Prediction of Arsenic Distribution in the Groundwater of Murshidabad District, West Bengal, India: Analyzing Spatiotemporal Patterns to Understand Human Health Risk, ACS ES&T Water 2 (12), 2409–2421.

*Nath, B., R. Chowdhury, **W. Ni-Meister**, & C. Mahanta, 2022. Predicting the distribution of arsenic in groundwater by a geospatial machine learning technique in the two most affected districts of Assam, India: The public health implications. GeoHealth, 6, e2021GH000585. https://doi.org/10.1029/2021GH000585.

*Nath, B., **W. Ni-Meister,** and W. Özdoğan, W., 2021. Fine-Scale Urban Heat Patterns in New York City Measured by ASTER Satellite—The Role of Complex Spatial Structures. Remote Sens. 2021, 13(19), 3797; https://doi.org/10.3390/rs13193797.

*Nath, B. and **W. Ni-Meister, 2021.** The Interplay between canopy structure and topography and its impacts on seasonal variations in surface reflectance patterns in the boreal region of Alaska—implications for surface radiation budget. *Remote Sens.* 2021, 13(16), 3108; https://doi.org/10.3390/rs13163108.

*Nath, B., **W. Ni-Meister,** and R. Choudhury., 2021. Impact of urbanization on land use and land cover change in Guwahati city, India and its implication on declining groundwater level, Groundwater for Sustainable Development (2020), https://doi.org/10.1016/j.gsd.2020.100500.

*Philogene, S. and **W. Ni-Meister**., 2021**.** Relationship between fire events and land use changes in the state of São Paulo, Brazil. *Remote Sens.* 2021, 13(15), 2853; https://doi.org/10.3390/rs13152853.

Wang, Q. and **W. Ni-Meister**., 2019.**.** Forest canopy height and gaps from multiangular BRDF, assessed with airborne LiDAR Data, Remote Sens. 2019, 11, 2566; doi:10.3390/rs11212566.

*Marrs, J. and **W. Ni-Meister,** 2019. Machine learning techniques for tree species classification using Co-registered LiDAR and hyperspectral data. Remote Sens. 2019, 11, 819.

***Ni-Meister, W**., W. Yang, *S. Lee, A. Strahler and F. Zhao, 2018. Validating modeled lidar waveforms in forest canopies with airborne laser scanning data, Remote Sensing of Environment, 204:229-243.

Kutter, E., C. Yi, G. Hendrey, H. Liu, T. Eaton, **W. Ni-Meister**, 2017. Recirculation over complex terrain, Journal of Geophysical Research – Atmosphere, 122(12), 2017. DOI: 10.1002/2016JD026409.

Wang, Q., Y. Pang, Z. Li, G. Sun, E. Xhen, and **W. Ni-Meister**, 2017. The potential of forest biomass inversion based on vegetation indices using multi-angle CHRIS/PROBA data, Remote sensing, 2018,8, 891; doi:10.3390/rs8110891.

Widlowski, J-L, C. Mio, M. Disney, J. Adams, I. Andredakis, C. Atzberger, J. Brennan, L Busetto, M. Chelle, G Ceccherini, R Colombo, J-F Côté, A. Eenmäe, R. Essery, J-P. Gastellu-Etchegorry, N. Gobron, E.Grau, V. Haverd, L. Homolová, H. Huang, L. Hunt, Kobayashi , B. Koetz, A. Kuusk, J. Kuusk, M. Lang, P. E. Lewis, J. L. Lovell,Z. Malenovsky, M. Meroni, F. Morsdorf, M. Mõttus, T. Nilson, **W. Ni-Meister,** B. Pinty, M. Rautiainen, M. Schlerf, B. Somers, J. Stuckens, M. M. Verstraete, W. Yang, F. Zhao, T. Zenone, 2015. The fourth phase of the radiative transfer model intercomparison (RAMI) exercise: Actual canopy scenarios and conformity testing, Remote Sensing of Environment, 169: 418–437

*Pistolesi, L. L., *W. Ni-Meister*, and K. C. McDonald, 2015. Mapping wetlands in the Hudson Highlands ecoregion with ALOS PALSAR: An effort to identify potential swamp forest habitat for Golden-winged Warblers, Wetland Ecology and Management, 23:95-112, DOI 10.1007/s11273-014-9381-3.

Peng, P., J. Shi, *W. Ni-Meister,* T. Zhao, and D. Ji., 2014. Evaluation of TRMM Multi-satellite Precipitation Analysis (TMPA) Products and Their Potential Hydrological Application at an Arid and Semiarid Basin in China, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, doi: 10.1109/JSTARS.2014.2320756, 2014.

Yang, X., A. H. Strahler, C. B. Schaaf, D. L.B. Jupp, T. Yao, F. Zhao, Z. Wang, D. S. Culvenor, G. J. Newnham, J. L. Lovell, R. O. Dubayah, C. E. Woodcock, *W. Ni-Meister*, 2013. Three-dimensional forest reconstruction and structural parameter retrievals using a terrestrial full-waveform lidar instrument (Echidna®), Remote Sensing of Environment, 135:36-51.

Shi Y., S. Choi, X. Ni, S. Ganguly, G. Zhang, H. V. Duong, M. A. Lefsky, M. Simard, S. S. Saatchi, S. Lee, *W. Ni-Meister*, S. Piao, C. Cao, R. R. Nemani,

R. B. Myneni, 2013. Allometric scaling and resource limitations model of tree heights: Part 1. Model optimization and testing over continental USA, Remote Sensing,5:284-306; doi:10.3390/rs5010284.

Choi, S., X. Ni, Y. Shi, S. Ganguly, G. Zhang, H. V. Duong, M. A. Lefsky, M. Simard, S. S. Saatchi, S. Lee, *W. Ni-Meister*, S. Piao, C. Cao, R. R. Nemani, R. B. Myneni, 2013. Allometric scaling and resource limitations model of tree heights: Part 2. Site based testing of the model, Remote Sensing,5:202-223; doi:10.3390/rs5010202.

*Green, G., S. Ahearn, and *W. Ni-Meister*, 2013. The Future of national-scale three-dimensional landscape mapping, ISPRS Journal of Photogrammetry Engineering and Remote Sensing , 79(2):185-194.

Zhao, F., A. H. Strahler, C. L. Schaaf, T. Yao, X. Yang, Z. Wang, M. A. Schull, M. O. Román, C. E. Woodcock, P. Olofsson, *W. Ni-Meister*, D. L.B. Jupp, J. L. Lovell, D. S. Culvenor, G. J. Newnham, 2012. Measuring gap fraction, element clumping index and LAI in Sierra Forest stands using a full-waveform ground-based lidar. *Remote Sensing of Environment,* 135:73-79.

Widlowski, J.-L., B. Pinty, M. Clerici, Y. Dai, M. De Kauwe, K. de Ridder, A. Kallel, H. Kobayashi, T. Lavergne, *W. Ni-Meister*, A. Olchev, T. Quaife, S. Wang, W. Yang, Y. Yang, and H. Yuan, 2011. RAMI4PILPS: An intercomparison of formulations for the partitioning of solar radiation in land surface models, *Journal of Geophysical Research*, 116:G02019, doi: 10.1029/2010JG001511.

Ni-Meister, W. and H. Gao, 2011. Assessing the impacts of vegetation heterogeneity on energy fluxes and snowmelt in boreal forests, *Journal of Plant Ecology, 4:37-47.*

*Dong, J. and *W. Ni-Meister*, 2011. Analysis of diurnal boundary layer development in boreal forests: measurements and simulations, *Journal of Plant Ecology, doi: 10.1093/jpe/rtr00:1-15.*

*Yang, W., *W. Ni-Meister*, and *S. Lee, 2011. Assessment of the impacts of surface topography, off-nadir pointing and vegetation structure on vegetation lidar waveforms using an extended geometric optical and radiative transfer model, *Remote Sensing of Environment,* 15(11):2810-2822.

*Lee, S., *W. Ni-Meister*, *W. Yang, 2011. Physically based vertical vegetation structure retrieval from ICESat data: Validation using airborne data in White Mountain National Forest, New Hampshire, USA, *Remote Sensing of Environment,* 115(11):2776-2785.

Zhao, F., X. Yang, M. Schull, M. Roman-Colon, T. Yao, Z. Wang, Q. Zhang, D. Jupp, D. Culvenor, G. Newnham, *W. Ni-Meister*, C. Schaaf, C. Woodcock, and A. Strahler, 2011. Measuring leaf area index, foliage profile, and stand height in New England forest stands using ground-based lidar. *Remote Sensing of Environment,* 115(11):2954-2964.

Yao, T. , X. Yang, F. Gao, Z. Wang, Q. Zhang, D. Jupp, D. Culvenor, G. Newnham, *W. Ni-Meister,* C.B. Schaaf, C. Woodcock, and A. Strahler, 2011. Estimation of forest structure parameter and biomass New England forest stands using Echidna ground-based lidar. *Remote Sensing of Environment,* 115(11):2965-2974.

Ni-Meister, W., *W. Yang, and N. Kiang, 2010. A clumped-foliage canopy radiative transfer model for a global dynamic terrestrial ecosystem model I: Theory, *Agriculture and Forest Meteorology*, 150(7-8):881-894, doi:10.1016/j.agrformet.2010.02.009.

*Yang, W., *W. Ni-Meister,* N. Kiang, P. R. Moorcroft, A. H. Strahler and A. Oliphant, 2010. A clumped-foliage canopy radiative transfer model for a global dynamic terrestrial ecosystem model I: Validation, *Agriculture and Forest Meteorology, 150(7-8):895907,* doi:10.1016/j.agrformet.2010.02.008.

Ni-Meister, W., *S. Lee, A. H. Strahler, C. E. Woodcock,C. Schaaf, J. Ranson, G.Sun, and J. B. Blair, 2010. Assessing general relationships between above-ground biomass and vegetation structure parameters for improved carbon estimate from vegetation lidar, *Journal of Geophysical Research,* VOL. 115, G00E11, doi:10.1029/2009JG000936.

*Lee, S., *W. Ni-Meister,* D. Toll, J. Nigro, A. L. Gutierrez-Magness and T. Engman, 2010. Assessing the hydrologic performance of the EPA's nonpoint source water quality assessment decision support tool using North American Land Data Assimilation System (NLDAS) products, *Journal of Hydrology, 387(3-4):212-220,* doi:10.1016/j.jhydrol.2010.04.009.

Nigro, J., D. Toll, E. Partington, *W. Ni-Meister*, *S. Lee, A. Gutierrez-Magnesse, T. Engman, and K. Arsenault, 2010. NASA-modified precipitation products to improve EPA nonpoint source water quality modeling for the Chesapeake Bay, *Journal of Environmental Quality, 39: 4: 1388-1401, doi:10.2134/jeq2009.0161.*

Ni-Meister, W., A. H. Strahler, C. E. Woodcock, C. Schaaf, D. L. B. Jupp, T. Yao, F. Zhao, and X. Yang, 2008. Modeling the hemispherical scanning, below-canopy lidar and vegetation structure characteristics with a geometric optical and radiative transfer model, *Canadian Journal of Remote Sensing, 34(Suppl. 2): S385-S397。*

Strahler, A. H, D. L. B. Jupp, C. E. Woodcock, C. B. Schaaf, T. Yao, F. Zhao, X. Yang, J. Lovell, D. Culvenor, G. Newnham, *W. Ni-Meister*, and W. Boykin-Morris, 2008.

Retrieval of forest structural parameters using a ground-based lidar instrument (Echidna@) *Canadian Journal of Remote Sensing,34(Suppl. 2):S426-S440.*

Ni-Meister, W., 2008. Recent advances on soil moisture data assimilation, Physical Geography, 29(1):19-37.

*Dong, J., *W. Ni-Meister,* and P. R. Houser, 2007. Impacts of vegetation and cold season processes on soil moisture -- climate relationships over Eurasia, *Journal of Geophysical Research, Vol. 112,D09106, doi:10.1029/2006JF007774.*

*Lee, S. and *W. Ni-Meister,* 2006. Monitoring coastal estuary water clarity using landsat multispectral data, *Middle States Geographer, 39:43-51*.

Ni-Meister, W., P. Houser, and J. Walker, 2006. Soil moisture initialization for climate prediction: Assimilation of SMMR soil moisture data into a land surface model, *Journal of Geophysical Research* Vol.111, D20102, doi:10.1029/2006JD007190.

Ni-Meister, W., J. Walker, and P. Houser,2005. Soil moisture initialization for climate prediction: Characterization of model observation errors, *Journal of Geophysical Research,* Vol.110, D13111,doi:10.1029/2004JD005745.

Pereira, J., B. Mota, J. L. Privette, K. K. Caylor, J. M.N. Silva, A. C.L. Sá, and *W. Ni-Meister*, 2004. A simulation analysis of the detectability of understory burns in *miombo* woodlands, *Remote Sensing of Environment*, 96(3): 296-310.

Pinty B., J. Widlowski, M. Taberner, N. Gobron, M. Verstraete, M. Disney, F. Gascon, J. Gastellu, L. Jiang, A. Kuusk, P. Lewis, X. Li, *W. Ni-Meister*, T. Nilson, P. North, W. Qin, L. Su, S. Tang, R. Thompson, W. Verhoef, H. Wang, G. Yan, H. Zang, 2004. The Radiation transfer Model Intercomparison (RAMI) Exercise: Results from the second phase, *Journal of Geophysics Research*, 109, D06210, 10.1029/2003JD004252.

Ni-Meister, W., D.L.B. Jupp, and R. Dubayah, 2001. Modeling lidar waveforms in heterogeneous and discrete canopies, *IEEE Transactions on Geoscience and Remote Sensing*, 39(9):1943-1958.

Yang, R., M.A. Friedl, and *W. Ni*, 2001. Parameterization of shortwave radiation fluxes for nonuniform vegetation canopies in land surface models, *Journal of Geophysical Research*, 106(D13):14275-14286.

Gao, X., A.R. Huete, *W. Ni,* and, T. Miura, 2001. Review of optical-biophysical relationships of pure vegetation spectral without background contamination, *Remote Sensing of Environment*, 74:609-620.

Ni, W. and C.E. Woodcock, 2000. Effect of canopy structure and the presence of snow on the albedo of boreal conifer forest, *Journal of Geophysical Research*, 105(D9): 11879-11888.

Ni, W., and D.L.B. Jupp, 2000. Spatial variance in directional remote sensing imagery – recent developments and future perspectives, *Remote Sensing Review*, 18(2-4):441-479.

Ni, W. and X. Li, 2000. A coupled vegetation – soil bidirectional reflectance model for a semi-arid landscape, *Remote Sensing of Environment*, 74:113-124.

Ni, W., X. Li, C.E. Woodcock, M. Caetano, and A.H. Strahler, 1999. An analytical model of bidirectional reflectance over discontinuous plant canopies, *IEEE Transactions on Geoscience and Remote Sensing*, 37(2):987-999.

Ni, W., C.E. Woodcock, and D.L.B. Jupp, 1999. Variance in bidirectional reflectance over discontinuous plant canopies, *Remote Sensing of Environment*, 69(1): 1-15.

Hardy, J.P., R.E. Davis, R. Jordan*, W. Ni,* and C.E. Woodcock, 1998. Snow ablation modeling in conifer and deciduous stands of the boreal forest, *Hydrological Processes*, 12:1763-1778.

Ni, W., X., Li, C.E. Woodcock, J.L. Roujean, and R. Davis, 1997. Transmission of solar radiation in boreal conifer forests: measurements and models, *Journal of Geophysical Research*, 102(D24): 29555-29566.

Ni, W., 1997. A coupled transilience model for turbulent air flow in plant canopy and planetary boundary layer, *Agricultural and Forest Meteorology*, 86: 77-105.

Davis, R.E., J. Hardy, *W. Ni,* C.E. Woodcock, C. McKenzie, R. Jordan, and X. Li, 1997. Variation of snow cover processes in the boreal forest: a parametric study on the effects of conifer canopy, *Journal of Geophysical Research,* 102(D24): 29389-29396.

Hardy, J.P., R. Davis, R. Jordan, X. Li, C. Woodcock*, W. Ni*, and J. McKenzie, 1997. Snow ablation modeling at the stand scale in a boreal jack pine forest, *Journal of geophysical Research,* 102(D24):29397-29406.

Li, X., *W. Ni,* B. Hu, C.E. Woodcock, and A.H. Strahler, 1996. Decoupling path-scattering of light in a homogeneous layer and multiple bouncing at its non-Lambertian bottom, *Science in China,* (series E), 39(6): 656-669b.

Li, X., *W. Ni,* B. Hu, A.H. Strahler, and C.E. Woodcock, 1996. Path-scattering of light in a homogeneous layer and multiple bouncing at its Non-Lambertian bottom, *China Science, (series E)* (In Chinese), 26(5): 457-466a.

Zhang, X., D. Yang, and *W. Ni*, 1993. PE (Potential Evapotranspiration) index and vegetation-climate classification-major methods and PEP programs, *Acta Phytoecological ET Geobotanica Sinica (in Chinese), Vol. 17, Feb.*

PEER-REVIEWED BOOK CHAPTERS

2015   *Ni-Meister, W.,* Aboveground terrestrial biomass and carbon stock estimations from multisensory remote sensing. *Remote Sensing Handbook*, CRC Press(2015), ISBN-13: 978-1482218015, ISBN-10: 1482218011.

2015   Green, G., S. Ahearn, and *W. Ni-Meister,* Downscaling On Demand: Examples in Forest Canopy Mapping, *Why Scale Still Matters: Applications That Advance GIScience and Remote Sensing* ,CRC Press.

2014   Zhang, X. and *W. Ni-Meister,* Remote sensing of forest biomass, *Biophysical Applications of Satellite Remote Sensing* edited by Jonathan Hanes, Publisher: Springer; 2014 edition, ISBN-10: 3642250467 and ISBN-13: 978-3642250460, Pages 63-98 (Chapter 3).

2013   *Ni-Meister, W.,* Soil Moisture Data Assimilation for State Initialization of Seasonal Climate Prediction, *Land Surface Observation, Modeling and Data Assimilation* edited

by S. Liang, X. Li, and X. Xie. Publisher: World Scientific Publishing Company; 1 edition (November 24, 2013), ISBN-10: 9814472603 and ISBN-13: 978-9814472609, Pages 379-404 (Chapter 12).

2004   Geiger B. and *W. Ni*. Directional reflection properties of heterogeneous surfaces, book chapter in *Bidirectional Properties of Land Surfaces* edited by M. Schoenermarck, publisher: Wissenschaft & Technik Verlag, Pages 147-172.

2004   Meister, G., K. Tornow, and *W. Ni*, Geometrical Optical BRDF Models, book chapter in *Bidirectional Properties of Land Surfaces* edited by M. Schoenermarck, publisher: Wissenschaft & Technik Verlag, Pages:82-104.

REPORTS

Ni, W., 1999. Atmospheric correction over land for Visible/Infrared Image Radiometer Suite (VIIRS) sensor of the National Polar-orbiting Operational Environmental Satellite System (NPOESS), Algorithm Theoretical Basis Document, Raytheon ITSS Internal Report.

CONFERENCE PRESENTATIONS

Ni-Meister, W., and A. Rojas, 2022. A lidar waveform-based allometric model for aboveground biomass through a geometric optical and radiative transfer (GORT) model, American Geophysical Union Fall Meeting, 1-17 December, 2022 (oral presentation).

Ni-Meister, W., and A. Rojas, 2021. Link lidar measured three-dimensional vegetation structure measurements with PAR transmission, and absorption in NEON forest sites, American Geophysical Union Fall Meeting, 1-17 December, 2022 (poster).

A. Rojas, 2021 and *Ni-Meister, W.*, 2021..Evaluation of biomass indices in a tropical forest for above ground biomass estimates at varying spatial scales, American Geophysical Union Fall Meeting, 1-17 December, 2021 (oral presentation)..

Nath , B. and *W. Ni-Meister*, 2021. Seasonal variations in surface reflectance patterns in the boreal region of Alaska the interplay between canopy structure and topography and its implication for surface radiation budget American Geophysical Union Fall Meeting, December, 2021 (oral presentation).

Nath , B. and *W. Ni-Meister*, 2021. Fine-scale urban heat pattern in New York City based on ASTER satellite measurements the role of complex spatial structures American Geophysical Union Fall Meeting, December, 2021 (Oral presentation).

Ni-Meister, W., I. T. Baker, and T. Magney, 2020. Scaling up solar-induced fluorescence from leaf to canopy in a conifer forest with the geometric optical and radiative transfer model, American Geophysical Union Fall Meeting, 1-17 December, 2020 (oral presentation).

Ni-Meister, W., I. T. Baker, and T. Magney, 2020. Scaling up solar-induced fluorescence from leaf to canopy in a conifer forest with the geometric optical and radiative transfer model, American Geophysical Union Fall Meeting, 1-17 December, 2020 (oral presentation).

Ni-Meister, W., I. T. Baker, and T. Magney, 2020. Scaling up solar-induced fluorescence from leaf to canopy in a conifer forest with the geometric optical and radiative transfer model, American Geophysical Union Fall Meeting, 1-17 December, 2020 (oral presentation).

Ni-Meister, W and *L. Reckhaus,*, 2020. Masking effect of vegetation on snow albedo feedback, NASA Terrestrial Hydrology Program Snow Virtual Meeting, September 11 - 14 2020.

Ni-Meister, W. and *S. Lee, 2020. Allometric relationships between above-ground biomass and lidar full waveform measurements – potential applications for global ecosystem dynamics

investigation (GEDI) mission, IEEE International Geoscience and Remote Sensing Symposium, September 26-October 2, 2020.

Ni-Meister, W., I. T. Baker, and T. Magney, 2020. Scaling up solar-induced fluorescence from leaf to canopy in a conifer forest with the geometric optical and radiative transfer model, American Geophysical Union Fall Meeting, 1-17 December, 2020 (oral presentation).

Kiang, N., *W. Ni-Meister*, W. Yang, and I. D. Aleinov, 2020. Canopy albedo predictions with an analytical geometric-optical radiative transfer model for fusing lidar remote sensing and demographic dynamic global vegetation models coupled to earth system models. American Geophysical Union Fall Meeting, 1-17 December, 2020 (oral presentation).

Ni-Meister W. and S. Lee, 2016. Allometric relationships between above-ground biomass and LiDAR full waveform measurements, *IEEE International Geoscience and Remote Sensing Symposium*, July 10-15, 2016, Beijing, China (Oral Presentation).

Ni-Meister and W., S. Lee, 2016. Allometric relationships between above-ground biomass and LiDAR full waveform measurements, Annual Fall Meeting of American Geophysical Union, San Francisco, CA, 12-16 December, 2016.

Ni-Meister, W., 2015. Impact of mountain pine beetle infestation on snowmelt: Variations with vegetation structure and geographical locations, American Geophysical Union, San Francisco, CA, December 14-18, (poster).

Ni-Meister, W., 2013. Evaluation a geometric optical and radiative transfer lidar waveform model, The American Society for Photogrammetry and Remote Sensing (ASPRS), March 24-28 Baltimore, Maryland (oral presentation).

Ni-Meister, W., 2012. Fusion of Remotely sensed 3Dvegetation structure with a dynamic global terrestrial ecosystem model for improved estimates of carbon stocks and land-atmosphere exchanges, New York, February 24-28, New York, New York.

Ni-Meister, W., S. Lee, W. Yang and N. Kiang, 2010. Development of vegetation structure inputs from ICESat, SRTM and MODIS for a dynamic global terrestrial ecosystem model, *IEEE International Geoscience and Remote Sensing Symposium*, July 25-30, Honolulu, Hawaii (poster).

Ni-Meister, W., S. Lee, W. Yang and N. Kiang, 2010. Development of vegetation structure inputs from ICESat, SRTM and MODIS for a dynamic global terrestrial ecosystem model, International Society of Photogrammetry and Remote Sensing, Technical Commission VII Symposium, Vienna, Austria, July 5-7 (oral presentation).

Ni-Meister, W., S. Lee and W. Yang, 2010. A physical approach to retrieve vegetation structure from ICESat/GLAS data, American Society of Photogrammetry and Remote Sensing, San Diego, California. April 26–30 (oral presentation).

Ni-Meister, W., S. Lee, A. H. Strahler, C. E. Woodcock, C. Schaaf, J. Ranson, G.Sun, and J. B. Blair, 2009. Assessing general relationships between above-ground biomass and vegetation structure parameters for improved carbon estimate from vegetation lidar, *American Geophysical Union,* San Francisco, CA, December 14-18, (oral presentation).

Yang, W., **W.,** *Ni-Meister,* and S. Lee, 2008. Assessment of the impacts of surface topography, off-nadir pointing and vegetation structure on vegetation lidar waveforms using an extended geometric optical and radiative transfer model, *American Geophysical Union,* San Francisco, CA, December 15-19, (poster). .

Lee, S., *W. Ni-Meister*, W. Yang, 2008. Physically based vertical vegetation structure retrieval from ICESat data: Validation using airborne data in White Mountain National Forest, New Hampshire, USA, *American Geophysical Union,* San Francisco, CA, December 15-

19, (poster).

W. Ni-Meister, S. Lee, A. Strahler, C. E. Woodcock, D. L. Jupp, G. Sun, J. Ranson, J. B. Blair and M. Hofton, 2008. Combining above canopy downward-looking and below canopy upward hemispherical scanning lidar for improved above ground biomass retrieval, *IEEE International Geoscience and Remote Sensing Symposium*, July 6-11, 2008, Boston, MA (oral presentation).

W. Ni-Meister, S. Lee, A. Strahler, C. E. Woodcock, D. L. Jupp, G. Sun, J. Ranson, J. B. Blair and M. Hofton, 2008. Combining above canopy downward-looking and below canopy upward hemispherical scanning lidar for improved above ground biomass retrieval, *VEG3D & BIOMASS: Science and measurement requirements for future spaceborne missions,* Charlottesville, VA, March 3-5 (poster).

W. Ni-Meister, W. Yang and N. Kiang, 2007. A structure-based canopy radiative-transfer scheme for a global dynamic terrestrial ecosystem model, *American Geophysical Union,* San Francisco, CA, December 10-14, (poster).

Ni-Meister, W., N. Kiang, and P. Moorcroft, 2006. Ent: Canopy radiative transfer for a global dynamic vegetation models: characterization of foliage clumping, *Joint Workshop on NASA Biodiversity, Terrestrial Ecology, and Related Applied Science,* College Park, Maryland, August 21-25, (poster).

Ni-Meister, W., 2006. 3D Vegetation structure extraction from lidar remote sensing, *IEEE International Geoscience and Remote Sensing Symposium & 27th Canadian Symposium on Remote Sensing,* Denver, Colorado, July 31-August 04, (oral presentation).

Ni-Meister, W., 2006. 3D Vegetation Structure extraction from lidar remote sensing, *American Geophysical Union,* spring Meeting, Baltimore, Maryland, May 21-25, (oral presentation).

Ni-Meister, W., 2005. 3D Vegetation structure extraction from lidar remote sensing, *The 9th International Symposium on Physical Measurements and Signature in Remote Sensing (ISPMSRS),* Beijing, China, October 17-19, (oral presentation).

Ni-Meister, W., P. Houser, and J. P. Walker, 2005. Soil moisture initialization for climate prediction: assimilating SMMR into a land surface model, *The 9th International Symposium on Physical Measurements and Signature in Remote Sensing (ISPMSRS),* Beijing, China, October 17-19, (oral presentation).

Ni-Meister, W., 2005. 3D vegetation structure extraction from lidar remote sensing, *The International Society for Optical Engineering,* San Diego, California, July 31-August 5, (poster).

Ni-Meister, W., J. P. Walker, and P. Houser, 2004. Soil moisture initialization for climate prediction: assimilating SMMR into a land surface model, *The Terrestrial Water Cycle: Modeling and Data Assimilation across Catchment Scales CAHMDA-II,* Princeton, New Jersey, October 25-27 (poster).

Ni-Meister, W. and J. Dong, 2004. Analysis of boundary layer development in boreal forest through models and observations, *26th Conference on Agricultural and Forest Meteorology*, Vancouver, August 22-26, (oral presentation).

Ni-Meister, W., J. P. Walker, and P. R. Houser, 2004. Soil moisture initialization for climate prediction: Characterization of model observation errors, *the 84 Annual American Meteorological Society,* Seattle, Washington, January 11-15. (oral presentation).

Ni-Meister, W., J. P. Walker, and P. R. Houser, 2003. Soil moisture initialization for climate prediction through data assimilation, *the 30 International Symposium on Remote Sensing of Environment,* Honolulu, Hawaii, November 10-14, (oral presentation).

W, Ni-Meister, J.P. Walker, R.H. Reichle, P.R. Houser, and R.D. Koster, 2002. Soil moisture initialization for climate predictions: Assimilating SMMR into a land surface model *American Geophysical Union*, fall meeting., San Francisco, California, December 9-13 (poster).

Reichle, R.H., R.D. Koster, *W. Ni-Meister*, and P.R. Houser, 2002. A parallel ensemble Kalman Filter for four-dimensional land data assimilation. *American Geophysical Union,* fall meeting, San Francisco, California, December 9-13, (oral presentation).

Ni, W., R. Dubayah, D. Lettenmaier, and E.F. Wood, 2001. Scaling up land surface processes in boreal forests, *American Geophysical Union,* spring meeting, Boston, Massachusetts, May 29-June 2, (oral presentation).

Ni, W., R. Dubayah and, J.B. Blair, 2000. Modeling lidar waveforms using a geometric and optical radiative transfer model for discontinuous plant canopies, *Ecological Society of America,* annual meeting, Snowbird, Utah, August 6-10, (oral presentation).

Ni, W., D.L. B. Jupp, P. Bicheron, and M. Leroy, 1999. Investigating the information in multi-view angle spatial variance of images from conifer forests using ASAS and POLDER, *Second International Workshop on Multiangular Measurements and Models,* San Francisco, CA , December 13-14, (oral presentation).

Gao, X., A.R. Huete and *W. Ni.*, 1999. Optical-biophysical relationships of pure vegetation spectra without background contamination, *American Geophysical Union, fall meeting,* San Francisco, CA , December 6-10, (oral presentation).

Ni, W., and C.E. Woodcock, 1999. Surface albedo of boreal conifer forest: modeling and measurements, *International Geoscience and Remote Sensing Symposium (IGARSS),* Hamburg, Germany, June 28-July 2 in (poster).

Ni, W. , 1999. Modeling the bidirectional reflectance for a semi-arid landscape, *International Geoscience and Remote Sensing Symposium (IGARSS),* Hamburg, Germany, June 28-July 2, (oral presentation).

Ni, W., X. Li, and C.E. Woodcock, 1998. A simplified GORT Model for Bidirectional reflectance over discontinuous plant canopies, *International Geoscience and Remote Sensing Symposium (IGARSS),* p.237-1239, Seattle, Washington, July 6-10, (oral presentation).

Meister, G., S. Sandmeier and *W. Ni,* 1998. Analyzing Hyperspectral BRDF Data of a Grass lawn and Watercress Surface Using and Empirical model, *International Geoscience and Remote Sensing Symposium (IGARSS),* p.1246-1248 Seattle, Washington, July 6-10, (oral presentation)..

Davis, R.E., C. Woodcock, J.P. Hardy, *W. Ni,* R. Jordan J.C. McKenzie, 1997. Spatially distributed modeling of snow in the boreal forest: A simple approach, *65th Western Snow Conference*, Banff, Canada, May 5-9, (oral presentation).

Davis, R.E., J.P. Hardy, *W. Ni* and C. Woodcock, 1997. Parameterizing and validating spatially distributed snow processes in forests*, American Geophysical Union*, fall meeting, San Francisco, California, December, 8-12, (oral presentation).

Hardy, J.P., R.E. Davis, R. Jordan, *W. Ni* and C. Woodcock, 1997. Snow ablation modeling in

conifer and deciduous stands of the boreal forest, *65th Western Snow Conference,* Banff, Canada, May 5-9, (oral presentation).

Li, X. and *W. Ni,* 1997. Fusion of multiangular and imaging spectrometer data, *Asian GIS AM/FM and GeoInformatics,* Taipei, Taiwan, May, (oral presentation).

Ni, W., X. Li, C.E. Woodcock J. L. Roujean, R. Davis, and A.H. Strahler, 1996. Modeling solar radiation transmission in boreal conifer forests, *International Geoscience and remote Sensing Symposium (IGARSS),* Lincoln, Nebraska, May 26-30, (oral Presentation).

Li, X., *W. Ni,* C.E. Woodcock and A. Strahler, 1996. A simplified hybrid model for radiation under discontinuous plant canopies, *International Geoscience and Remote Sensing Symposium (IGARSS),* Lincoln, Nebraska, May 26-30, (oral Presentation).

Ni, W., B. Davis and C.E. Woodcock, 1996. A combined turbulent air flow, solar radiation and snowmelt model for boreal coniferous forest, *American Geophysical Union,* fall meeting, San Francisco, California, December 9-13, (abstract).

Yang, X., *W. Ni,* and David, R. Miller., 1994. Application of transilient turbulence theory to model turbulent transport processes on vegetation, 1994. *21st Conference on Agricultural and Forest Meteorology*, March 7-11, San Diego, California, (oral presentation).

Invited Talks:

2020   SBG working group virtual seminar

2016   IEEE Geoscience and Remote Sensing Society 2016 Summer School (GR4S), Beijing, P. R. China, July 7-8.

2013   Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, Beijing, P.R. China

2013   Institute of Geography, Chinese Academy of Sciences, Beijing, P.R. China,

2013   Nanjing University of Science and Technology, Nanjing, P.R. China,

2013   NASA Goddard Space Flight Center, Greenbelt, MD

2012   Institute of Remote Sensing Applications, Chinese Academy of Sciences, P. R. China

2008   NASA Goddard Space Flight Center, Greenbelt, MD

2008   The City College of New York, The City University of New York

2005   Department of Earth & Environmental Studies, Monclair State University

2005   Department of Geography, University of Delaware

2004   Department of Civil Engineering, Princeton University

2004   Department of Geography, Hunter College of The City University of New York

2003   Department of Geography, Ohio State University,

2003   Department of Geography, Hunter College of The City University of New York,

2003   Department of Geography, East Carolina University,

2003   Department of Geology, Department of Geology, University of Texas at Austin, .

2003   Department of Geography and Geology, Western Kentucky University,

2002   Department of Geography, University at Buffalo, The State University of New York,

2002   Department of Geology, University of Texas at Austin,

2001   Department of Geography, North Carolina University at Chapel Hill,

1996   Department of Geography, Michigan State University.

TEACHING AND ADVISING

COURSES TAUGHT

The University of Maryland
- Introduction to Remote Sensing (Winter 2003)

The City University of New York – Hunter College
- Environmental Data Science
- Digital Earth
- Remote Sensing of The Environment
- Advanced Digital Image Processing
- Earth From Above
- Introduction to Remote Sensing
- Hydrology
- Biogeography
- Field Biogeography
- Weather and Climate
- Field Ecology of Central Park

ADVISING

Current Graduate Student Advisees
Major advisor
Francesca Lingo (Ph.D.)
Mellissa Linares (Ph.D.)
Ian Grant (M.S.)
Jada Macharie (M.S.)
Jeremiah Clayton (M.S.)

Former Postdoc Advisee
Wenze Yang
Jiarui Dong

Former Graduate Student advisees
Major advisor
Shiyan Lee (Ph.D., CUNY, 2010)

Bibhash Nath (M.S. of Geoinformatics)
Jamie Bastian (M.A. of Geography, 2023)
Anthony Albanese (M. S. of Geoinformatics, 2023)
Alejandro Rojas (M.S. of Geoinformatics, 2022)
Helen Polanco (M.S. of Geoinformatics, 2021)
Robert Abugel (M.A. of Geography, 2021)
Lucas Reckhaus (M.S. of Geoinformatics, 2020)

Garett Hauschild (MA, 2016)
Julia Marrs (MA, 2016)
Mimi Hatzis (MA, 2015)
Linda Pistolesi (MA, 2013)
Parry Drew (MA, 2012)
Rudrasen Persaud (MA, 2014)
George Pingeon (MA, 2014)
Abby Jameson (MA, 2014)
Anuradha Swatantran (PhD candidate, transferred to a different school) Eliza Bradley
(PhD candidate, transferred to a different school)
Paradorn Wongchanapai (MA, 2012)
 Nighar Sultana (MA, 2012)
Pat Hackbarth (M.A.,2010)
Robert Weiner (M.A.,2006)
Xixi Chen (M.A., 2004)

Committee member
Feng Zhao (Ph.D., 2010, Boston University, committee member)
Gordon Green (Ph.D., 2014, The City University of New York)
Xiyan Xu (Ph.D.2012, The City University of New York)

PROFESSIONAL SERVICE

Membership

1997-current   *American Geophysical Union*
2013-2015   *Ecology Society of America*
2006-2009   *Association of American Geographers*
1997-2000   *IEEE International Geoscience and Remote Sensing Society*

Reviewing Activities

2004-current   NASA proposal review panels – Advanced Information Systems Technology
(AIST), Minority University Research and Education Project (MUREP), SERVIR
Applied Science, Interdisciplinary Sci. in the Earth Science Enterprise, Terrestrial
Ecosystem Program, Biodiversity Program, Remote Sensing Theory Program,
Ocean and Coastal Water Quality Program, New Investigator Program (NIP),
Global Climate Change Education Program, and Citizen Science Program.

Manuscript Reviewing for *Nature, Science, Journal of Geophysics Research, Geophysical
Research Letters, Journal of Hydrometeorology, Remote Sensing Reviews, IEEE Transaction
of Geoscience and Remote Sensing, IEEE Transaction of Geoscience and Remote Sensing
Symposium, Remote Sensing of Environment, Photogrammetric Engineering and Remote
Sensing, Remote Sensing, Agriculture and Forest Meteorology, Ecological Modeling,
Climate Dynamics*

Proposal Reviewing for *National Aeronautics and Space Administration (NASA), National
Oceanic and Atmospheric Administration (NOAA), National Science Foundation (NSF),
Canadian Foundation for Climate and Atmospheric Sciences (CFCAS)*

Session Chair: *Forest Structure and Biomass, IEEE International Geoscience and Remote*

Sensing Symposium, July 6-11, 2008, Boston, Massachusetts.

Session Chair*: Modeling, IEEE International Geoscience and Remote Sensing Symposium, July 25-30, 2010,Honolulu, Hawai .*

Interactive Section Competition Evaluation Committee*: IEEE International Geoscience and Remote Sensing Symposium, July 31-August 4, 2006, Denver, Colorado.*