MING YE

Professor in Computational Hydrology/Geology

Department of Scientific Computing

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EDUCATION

Ph.D. in Hydrology, Department of Hydrology and Water Resources, College of Engineering, University of Arizona, December 2002 **Minor** in Applied Mathematics **Dissertation:** Parallel Finite Element Algorithm for Transient Flow in Bounded **Randomly Heterogeneous Domains** Advisor: Shlomo P. Neuman **B. Sc.** in Geology, Department of Earth Sciences, Nanjing University, China, July 1997 PROFESSIONAL EXPERIENCE Professor 8/2017-present Department of Earth, Ocean, and Atmospheric Science and Geophysical Fluid Dynamics Institute, Florida State University, Tallahassee, FL Professor 8/2016-8/2017 Department of Scientific Computing and Geophysical Fluid Dynamics Institute, Florida State University, Tallahassee, FL Associate Professor 8/2011-7/2016 Department of Scientific Computing and Geophysical Fluid Dynamics Institute, Florida State University, Tallahassee, FL **Assistant Professor** 1/2007-8/2011 Department of Scientific Computing, Florida State University, Tallahassee, FL **Assistant Research Professor** 6/2004-12/2006 Division of Hydrologic Sciences, Desert Research Institute, Las Vegas, NV **Postdoctoral Research Associate** 11/2002-5/2004 Hydrology Technical Group, Energy and Environmental Directorate, Pacific Northwest National Lab, Portland Office, Portland, OR **Graduate Research Assistant** 8/1999-10/2002 Department of Hydrology and Water Resources, College of Engineering, University of Arizona, Tucson, AZ **RESEARCH AND TEACHING INTERESTS** • Numerical simulation of groundwater flow and contaminant reactive transport in saturated and unsaturated porous and fractured media

- Uncertainty quantification and risk assessment for hydrologic modeling
- Estimation of nutrient load to groundwater aquifers and surface water bodies

- Karst and sink hole hydrogeology
- Geostatistical methods for site characterization and contaminant remediation
- Stochastic methods in groundwater hydrology
- GIS-based software development for groundwater modeling
- Coastal geomorphology and hydrodynamic modeling
- Numerical modeling of soil respiration for climate change modeling

AWARDS AND HONORS

- 2015, Walter L. Huber Civil Engineering Research Prize, American Society of Civil Engineers
- 2014, Developing Scholar Award, Florida State University
- 2014, Outstanding Contribution in Reviewing Award, Advances in Water Resources
- 2013, Top 10 Cited Paper 2012-2013, Advances in Water Resources
- 2012, Innovator Award, Florida State University
- 2012, Fellow, Geological Society of America
- 2012, Early Career Award, Department of Energy

EDITORIAL BOARD

2014 – present, Associate Editor of *Journal of Hydrology* published by Elsevier 2011 – present, Associate Editor of *Water Resources Research* published by the American Geophysical Union

2009 – 2010, Guest Editor of a special issue entitled "Quantification of model uncertainty in environmental modeling" for the journal of *Stochastic Environmental Research and Risk Assessment* published by Springer

2015 – present, Guest Editor of a special issue entitled "Engagement, Communication, and Decision-Making under Uncertainty" for the journal of *Water Resources Research* published by American Geophysical Union

MEDIA COVERAGE

- Florida Chamber of Commerce (2015): Ming Ye was interviewed by Brian LaPointe for a program funded by the Florida Chamber of Commerce for environmental sustainability in Florida.
- **Russia Today International (2015)**: Ming Ye was interviewed by Russia Today International to discuss origins of sinkholes in Russia. The interview is available at https://www.youtube.com/watch?v=NTxE9buMVn4&feature=youtu.be.
- **History Channel (2015)**: Our laboratory study of sinkhole development and catastrophic collapse was included in a one-hour program of the History Channel entitled "Engineering Disaster". The History Channel video is online at http://www.history.com/shows/engineering-disasters

- PBS/NOVA (2015): Our laboratory study of sinkhole development and catastrophic collapse was included in a one-hour program of PBS/NOVA entitled "Sinkholes: Buried Alive". It is covered at FSU news http://news.fsu.edu/More-FSU-News/Researcher-to-appear-on-NOVA-s-Sinkholes-Buried-Alive. The PBS/NOVA video is online at http://www.pbs.org/wgbh/nova/earth/sinkholes.
- WFSU (2014): Our laboratory and computational studies on sinkhole development and catastrophic collapse was reported on PBS WFSU in 2014. View the media coverage at <u>http://news.fsu.edu/Watch-and-Listen/Radio-Stories/FSU-researchers-studying-sinkhole-patterns</u>.

https://www.youtube.com/watch?v=1d_5yLnlpA0&feature=youtu.be.

- FSU News (2011): Our development of new software for nitrogen transport modeling was report by FSU in 2011. See the report entitled "New software aids fight against nitrates in Florida's groundwater" at https://www.fsu.edu/news/2011/07/06/new.software/.
- NPR/Morning Edition (2007): Our numerical study of radionuclide transport was reported on. See the report entitled "Gas Drilling Plan Near Nuclear Site Raises Worries" at http://www.npr.org/templates/story/story.php?storyId=15056460

GRANTS AND CONTRACTS (CURRENT)

- Multimodel Bayesian Data-Worth Analysis for Groundwater Remediation Design, \$455,361 (FSU Budget \$271,601)
 Principal Investigator (PI) (Co-PIs: Roseanna Neupauer and Joseph Kasprzyk, University of Colorado, Boulder), National Science Foundation, 8/2016 – 7/2019
- (2) Computational Bayesian Framework for Quantification and Reduction of Predictive Uncertainty in Groundwater Reactive Transport Modeling, \$761,437

Principal Investigator (Single PI), Department of Energy Early Career Award, 7/2012 - 6/2018

(3) Developing a GIS-Based Software for Estimating Nitrate Fate and Transport from Septic Systems in Surficial Aquifers, \$487,309 Principal Investigator (single PI), Florida Department of Environmental Protection, 9/2011 – 8/2017

GRANTS AND CONTRACTS (COMPLETED)

- Mathematical and Experimental Investigation of Catastrophic Sinkhole Collapse, \$25,000
 Principal Investigator, FSU CRC MultiDisciplinary Support (MDS) Program, 2/2014 – 8/2015
- (5) Effect of Calibration Data on Evaluating Plausibility of Alternative Groundwater models, \$105,265
 Principal Investigator (single PI), National Science Foundation, 9/2009 – 8/2013
- (6) Mult-Scale Assessment of Prediction Uncertainty in Coupled Reactive Transport Models, \$193,634 (total \$1,195,310)

Co-Principal Investigator (PI: Gary Curtis), Subsurface Biogeochemical Research (SBR) Program, Department of Energy, 4/2009 – 4/2013

- (7) Parallel Computing for Assessment of Predictive Uncertainty in Groundwater Reactive Transport Modeling, \$75,000
 Principal Investigator (single PI), ORAU/ORNL High Performance Computing (HPC) Grant Program, 6/2009 – 12/2012
- (8) Effect of Near-Term Sea-Level Rise on Coastal Military Infrastructure, \$186,667 (total \$1,002,000)
 Co-Principal Investigator (PI: Joseph Donoghue), Strategic Environmental Research and Development Program (SERDP), Department of Defense, 4/2009 – 4/2012
- Multimodel Bayesian Analysis of Data Worth in Environmental Modeling, \$14,000
 Principal Investigator (single PI), FSU CRC Committee on Faculty Research Support (COFRS) Program, 5/2011 – 9/2011
- (10) Environmental Impacts of Energy Production Systems: Analysis, Evaluation, Training, and Outreach, \$10,737 (total \$87,417)
 Co-Principal Investigator (PI: Amy Chan-Hilton), Institute for Energy Systems, Economics, and Sustainability, Florida State University, 2/2009 – 6/2011
- (11) Plume-Scale Heterogeneity Characterization and Numerical Simulation of Contaminant Transport at the BC Cribs Site: A Preliminary Study, \$14,146

Principal Investigator (Single PI), Fluor Hanford, 10/2008 - 5/2009

- (12) A New Method of Characterizing Heterogeneity and Uncertainty of Soil Hydraulic Parameters, \$30,259 Principal Investigator (Single PI), Fluor Federal Services, 4/2007 – 9/2007
- Uncertainty Assessment and Data Assimilation for Groundwater Reactive Transport Modeling, \$15,863
 Principal Investigator (Single PI), Florida State University, 5/2007 – 8/2007
- (14) Geostatistical and Stochastic Study of Radionuclide Transport in the Unsaturated Zone at Yucca Mountain, \$624,678 Principal Investigator, Department of Energy, 6/2004 – 5/2007
- (15) A New Method to Estimate Soil Hydraulic Parameter Uncertainty and Heterogeneity Using Bayesian Updating and Neural Network Methods, \$357,899
 Co-Principal Investigator (PI: Julian Zhu), Department of Energy, 10/2005 – 9/2008
- (16) Uncertainty Analysis of Uranium Transport at Hanford 300 Area, \$70,000
 Principal Investigator (single PI), Nuclear Regulatory Commission, 10/2004 9/2006
- (17) Using Artificial Neural Networks to Predict Migration from Buried Liquid Discharges, \$35,000

Principal Investigator (single PI), Fluor Federal Services, 6/2005 – 5/2006

COMPUTER SOFTWARE DEVELOPMENT

(1) ArcNLET: ArcGIS-Based Nitrate Load Estimation Toolkit

Public-domain software available at http://people.sc.fsu.edu/~mye/ArcNLET/. Developed with student J. Fernando Rios under the support of Florida Department of Environmental Protection.

(2) VZMOD: Vadose Zone MODel of Nitrogen Transformation and Transport

Public-domain software available at http://people.sc.fsu.edu/~mye/VZMOD/. Developed with post-doc Liying Wang under the support of Florida Department of Environmental Protection.

TEACHING EXPERIENCE

- (1) Symbolic and Numerical Computing (ISC 3222)
 Department of Scientific Computing, Florida State University, Tallahassee, FL
- (2) **Programming for Scientific Applications (ISC 4304)** Department of Scientific Computing, Florida State University, Tallahassee, FL
- (3) Applied Computational Science II (ISC 5316) Department of Scientific Computing, Florida State University, Tallahassee, FL
- Numerical Methods for Earth and Environmental Sciences (ISC 5226)
 Department of Scientific Computing, Florida State University, Tallahassee, FL
- Uncertainty Analysis in Computational Science (ISC 5237)
 Department of Scientific Computing, Florida State University, Tallahassee, FL
- (6) Applied Groundwater Modeling (ISC 5236/GLY 5896)
 Department of Scientific Computing and Department of Geological Sciences, Florida State University, Tallahassee, FL
- (7) Principles of Hydrology (GLY 4820/5827)
 Department of Geological Sciences, Florida State University, Tallahassee, FL
- (8) Geostatistics (GEY 716) Department of Geosciences, University of Nevada, Las Vegas, Las Vegas, NV
- (9) Seminar: Groundwater Reactive Transport Modeling (ISC 5939-03) Department of Scientific Computing, Florida State University, Tallahassee, FL
- (10) Seminar: Numerical Simulation of Coastal Hydrodynamics (ISC 5939-07) Department of Scientific Computing, Florida State University, Tallahassee, FL
- (11) Seminar: Multiphase Flow and Solute Transport Modeling (ISC 5939-02) Department of Scientific Computing, Florida State University, Tallahassee, FL

GRADUATE STUDENTS

Ph.D. Degree (7 + 3 current)

- Nur Ahmed, Spring 2017 present, Geophysical Fluid Dynamics Institute (1)
- (2)Hongzhuan Lei, Fall 2015 – present, Department of Scientific Computing
- Xiaoli Liu (female), Fall 2010 present, Department of Civil Engineering, Co-(3) advised with Professor Gang Chen
- (4) Roger Benito Pacheco Castro (Summer 2017), Geophysical Fluid Dynamics Institute, Florida State University Dissertation: Statistical Analysis of Karst Aquifer Pollution, Karst Flow Model Validation at Laboratory Scale, and Development of Seepage Meter Now a scientist at Universidad Autonoma de Yucatan, Mexico
- Bikash Saha (Spring 2017), Department of Scientific Computing, Florida State (5) University, Co-advised with Alan Niedoroda Dissertation: Modeling of Complex Behaviors of Submarine Debris Flows Now an engineer in the Florida Department of Management Services
- Karina Khazmutdinova (Fall 2016) (Female), Geophysical Fluid Dynamics (6) Institute, Co-advised with Professor Nick Moore in the Math department Dissertation: Water and Air Flows in Karstic Caves and Conduits Now a post-doc at the Florida State University
- (7)Benjamin McLaughlin (Summer 2015), Department of Scientific Computing, Florida State University, Co-advised with Professor Janet Peterson Dissertation: Reduced-Order Modeling of Reactive Transport for Advection-Dominated Problems with Nonlinear Kinetic Reactions Now a scientist at the Naval Support Activity Panama City
- Heng Dai (Fall 2014), Department of Scientific Computing, Florida State (8) University Dissertation: Uncertainty Quantification for Groundwater Reactive Transport and Coastal Morphological Modeling Now a post-doc at the Pacific Northwest National Laboratory
- (9) Dan Lu (Spring 2012) (Female), Department of Scientific Computing, Florida State University Dissertation: Assessment of Parametric and Model Uncertainty in Groundwater Modeling

Now a staff scientist at the Oak Ridge National Laboratory

Hailin Deng (Fall 2009), Department of Geological Sciences, Florida State (10)University

Dissertation: Upscaling Reactive Transport Parameters for Porous and Fractured Porous Media

Now a Scientist at Australia Commonwealth Scientific and Industrial Research Organization (CSIRO)

Master Degree (6 + 2 current)

- Serena Pham (female), Fall 2015 present, Department of Scientific Computing (1)
- Xuemin Zhang (female), Fall 2016 present, Department of Scientific Computing (2)

- Benjamin McLaughlin (Fall 2011), Department of Scientific Computing, Florida State University, Co-advised with Professor Janet Peterson
 <u>Thesis</u>: Reduced Order Modeling of Reactive Transport in a Column Using Proper Orthogonal Decomposition
 Now a doctoral student at the Department of Scientific Computing at the Florida State University
- Heng Dai (Fall 2011), Department of Scientific Computing, Florida State University
 <u>Thesis</u>: Barrier Island Responses to Storms and Sea-Level Rise: Numerical Modeling and Uncertainty Analysis
 Now a post-doc at the Pacific Northwest National Laboratory
- (5) Raoul Fernandes (Summer 2011), Department of Earth, Ocean, and Atmospheric Science, Florida State University <u>Thesis</u>: Statistical Methods for Estimating Denitrification Rate Now an Environmental Engineer at New Zealand Environmental Services
- (6) Fernando Rios (Fall 2010), Department of Scientific Computing, Florida State University
 <u>Thesis</u>: A GIS-Based Model for Estimating Nitrate Fate and Transport from Septic Systems in Surficial Aquifers
 Now a post-doc at the John Hopkins University
- (7) Geoffery L. Miller (Fall 2010), Department of Scientific Computing, Florida State University
 <u>Thesis</u>: Parametric Uncertainty Analysis of Uranium Transport Subsurface Complexation Models
 Now a Lecture of the Program of Interdisciplinary Computing of the Florida State University
- (8) Feng Pan (Fall 2005), Department of Geosciences, University of Nevada, Las Vegas

<u>Thesis</u>: Uncertainty Analysis of Radionuclide Transport in the Unsaturated Zone at Yucca Mountain (Thesis advisor)

Now a Research Assistant Professor in the Department of Civil & Environmental Engineering, Energy & Geoscience Institute of the University of Utah

High School (4)

- (1) Deirdre Edward and Alex Howard, FSU Young Scholars Program, Summer 2015
- (2) Andrea Hands and Kanad Sarkar, FSU Young Scholars Program, Summer 2016

POST-DOCS AND VISITING SCHOLARS

Post-docs (7)

- (1) Ahmed Elshall, 3/2014 2/2017, Graduated from Louisiana State University
- (2) Mohammad Sayemuzzaman, 6/2014 8/2015, Graduated North Carolina A&T State University
- (3) Xuehang Song, 8/2014 present, now a post-doc at the Pacific Northwest National Laboratory
- (4) Yan Zhu, 2/2014 2/2015, now a Lecture at Wuhan University

- (5) Huaiwei Sun, 9/2012 10/2013, now a Lecture at Huazhong University of Science and Technology
- (6) Liying Wang (female), 4/2010 5/2012, now a Project Manager at the China Pearl River Water Resource Planning Surveying and Designing Co. Ltd,
- (7) Xiaoqing Shi, 1/2011 1/2012, now an Associate Professor at Nanjing University

Visiting Scholars (14 + 2 current)

- (1) Jie Ren, 12/2016 12/2017, Xi'an University of Technology, China
- (2) Jun Li, 11/2016 11/2017, Sichuan University, China
- (3) Yue Zhang, 11/2016 11/2017, Yunnan Agricultural University, China
- (4) Bin Xu, 10/2016 10/2017, China University of Mining and Technology, China
- (5) Qiming Zhang, 10/2015 4/2016, Ningxia University, China
- (6) Li Wang, 10/2015 4/2016, Ningxia University, China
- (7) Ting Li, 10/2015 4/2016, Ningxia University, China
- (8) Liyu Chen, 10/2015 4/2016, Ningxia University, China
- (9) Saeedeh Samani, 2/2015 9/2015, University of Tabriz, Iran
- (10) Dangliang Wang, 2/2014 2/2015, Now an Associate Professor at China University of Mining and Technology
- (11) Xianqui Zeng, 9/2013 8/2014, Now a Lecture at Nanjing University
- (12) Xiaohu Tao, 9/2013 8/2014, Now a Doctoral student at Hohai University
- (13) Peigui Liu, 7/2013 1/2014, now a Lecturer at Hefei University of Technology
- (14) Dongwei Gui, 5/2013 12/2013, now a Research Scientist at Xinjiang Institute of Ecology and Geography
- (15) Dejun Feng, 9/2011 8/2012, now an Associate Professor, Southwest Jiaotong University
- (16) Zhiliang Wang, 3/2007 2/2008, now a Professor, North China University of Water Conservancy and Electric Power

MEMBERSHIPS

American geophysical Union (AGU) Geologic Society of America (GSA) American Society of Civil Engineers (ASCE) Geochemical Society (GS) National Groundwater Association (NGWA) International Association of Hydrological Sciences (IAHS) International Association for Mathematical Geosciences (IAMG) Chinese American Water Resources Association (CAWRA)

NATIONAL COMMITTEE/PANEL MEMBERSHIPS

2017, Review Panelist, Strategic Environmental Research and Development Program (SERDP), Department of Defense

2016, Review Panelist, Environmental System Science, Ecohydrology and Biogeochemistry Panel, Department of Energy

2017 – present, Chair of Uncertainty Analysis Advisory Committee, American Geophysical Union

2014 – present, Member of Groundwater Management Committee of the Environmental & Water Resources Institute of the American Society of Civil Engineers

2013 – 2015, Member of Groundwater Technical Advisory Committee, American Geophysical Union

2009, Review Panelist, SciDAC Program (Scientific Discovery through Advanced Computing), Office of Advanced Scientific Computing Research (ASCR), Department of Energy

2003 – present, Working Group 2: Uncertainty Analysis and Parameter Estimation of Interagency Steering Committee on Multimedia Environmental Models (https://iemhub.org/topics/iscmem)

INVITED COLLOQUIUM/SEMINAR/CONFERENCE PRESENTATIONS

- 2017 Experimental and Numerical Investigation of Catastrophic Sinkhole Collapse, Institute for Computational Engineering and Sciences, 6/5/2017, the University of Texas at Austin, Austin, Texas.
- 2017 Computational Modeling and Uncertainty Analysis for Advanced Understanding of Complex Systems, 6/6/2017, Texas Bureau of Economic Geology, Austin, Texas.
- 2017 Computational Modeling and Uncertainty Analysis for Advanced Understanding of Complex Systems, 4/10/2017, Department of Petroleum and Mineral Engineering, Pennsylvania State University, University Park, Pennsylvania.
- 2017 Groundwater Modeling and Uncertainty Analysis toward Advanced Understanding of Subsurface Environmental Problems, 3/22/2017, Department of Geological Sciences, University of Texas, San Antonio, Texas.
- 2016 Nitrogen Contamination in Florida and Numerical Estimation of Nitrogen Loading from Septic Systems to Surface Waterbodies, 10/13/2016, Kentucky Geological Survey, Lexington, Kentucky
- 2016 Experimental and Numerical Investigation of Catastrophic Sinkhole Collapse, 10/14/2016, Department of Earth and Environmental Sciences, University of Kentucky, Lexington, Kentucky
- 2016 Global Sensitivity Analysis to Identify Important System Processes and Parameters under Model Uncertainty, 8/17/2016, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
- 2016 Nitrogen Contamination in Florida and Numerical Estimation of Nitrogen Loading from Septic Systems to Surface Waterbodies, International Association for Hydro-Environmental Engineering and Research, 2016 Summer Seminar, University of Central Florida, 8/15/2016, Orlando, FL.
- 2016 Evaluation of Nitrogen Contamination from Septic Systems in Coastal Areas, International Symposium on Sustainable Development in Water Resources and Ecological Environment, Jinan University, Guangzhou, Guangdong, China, March 25 – 29, 2016.

- Short course, TPE (Third Pole Environment) and TiP (Tibetan Plateau: Formation

 Climate Ecosystems) Science & Technology Training, organized by the
 Institute of Tibetan Plateau Research, Chinese Academy of Science, Kunming,
 Yunnan, August 10 23, 2013.
- 2015 ArcNLET-Based Numerical Simulation of Nitrogen Transport in Soil and Groundwater for Estimating Nitrogen Loading from Septic Systems to Surface Waterbodies, July 9, Lower St. Johns River Water Management District, Palatka, FL.
- 2015 Computational Bayesian Framework for Quantification of Predictive Uncertainty in Environmental Modeling, Environmental System Science PI Meeting, Department of Energy, April 28 – 29, Washing D.C.
- 2014 A Bayesian Framework for Environmental Uncertainty Quantification with Application to Soil Carbon Modeling, August 5, Climate Change Science Institute, Oak Ridge National Laboratory, Oak Ridge, TN
- 2014 Global Sensitivity Analysis for Groundwater Modeling, September 22, Department of Hydrosciences, College of Earth Science and Engineering, Nanjing University, Nanjing, China
- 2014 Advances in Unccertainty Analysis for Groundwater Reactive Transport Modeling, September 16, State Key Laboratory of Water Resources and Hydropower Engineering Science, Wuhan University, Wuhan, China
- 2014 Advances in Unccertainty Analysis for Groundwater Reactive Transport Modeling, September 19, Department of Civil and Environmental Engineering, Hefei University of Technology, Hefei, China
- 2014 A Bayesian Framework for Environmental Uncertainty Quantification with Application to Soil Carbon Modeling, September 12, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing, China
- 2014 A Bayesian Framework for Uncertainty Quantification for Groundwater Reactive Transport Modeling, March 11, Illinois Geological Survey, Champaign, IL.
- 2014 Bayesian Approaches of Uncertainty Quantification for Groundwater Reactive Transport Modeling, February 14, Department of Geosciences, University of South Florida, Tampa, FL.
- 2014 A Bayesian Framework for Uncertainty Quantification with Application to Groundwater Reactive Transport Modeling, SIAM Conference on Uncertainty Quantification, March 31 – April 3, Savannah, GA.
- 2014 Risk Analysis and Decision-Making under Uncertainty, Interagency Steering Committee on Performance and Risk Assessment Community of Practice Annual Technical Exchange Meeting, December 11 – 12, Las Vegas, NV.
- 2013 A Bayesian Framework for Uncertainty Quantification and its Implementation using Sparse-Grid Collocation Schemes: with Application to Groundwater Reactive Transport Modeling, December 9, Lawrence Berkeley National Laboratory, Berkeley, CA.

- 2013 An Overview of ArcNLET and Associated Tools for Estimation of Nitrate Load from Septic Systems to Surface Water Bodies, March 7th, Lower St. Johns River Water Management District TAC Meeting, Jacksonville, FL.
- 2012 Quantification of Predictive Uncertainty in Subsurface Environmental Modeling, May 28th, Department of Hydrosciences, College of Earth Science and Engineering, Nanjing University, Nanjing, China
- 2012 Quantification of Predictive Uncertainty in Subsurface Environmental Modeling, May 22nd, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Beijing, China
- 2012 Quantification of Predictive Uncertainty in Subsurface Environmental Modeling, May 3rd, State Key Laboratory of Water Resources and Hydropower Engineering Science, Wuhan University, Wuhan, China
- 2011 Numerical Modeling and Uncertainty Analysis for Effects of Near-Term Sea-Level Rise on Barrier Islands, October 31st, Florida Climate Institute, Tallahassee, FL.
- 2011 Quantification of Model and Parametric Uncertainty in Surface Complexation Models for Uranium Transport Modeling, August 29th, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
- 2011 Estimation of Nitrate Load from Septic Systems to Surface Water Bodies Using ArcNLET: an ArcGIS-Based Nitrate Load Estimation Toolkit, Florida Storm Association Symposium: New Directions in Stormwater Permits and Programs, September 9, Orlando, FL.
- 2011 Multimodel Bayesian Analysis of Data-Worth Applied to Unsaturated Fractured Tuffs, International Conference on Groundwater: Our Source of Security in an Uncertain Future, September 19 – 21, Pretoria, South Africa
- 2011 Arc-NLET: Nitrate Load Estimation Toolkit, 2011 Seven Hills Regional User Group (SHRUG) GIS Workshop, Tallahassee, FL.
- 2010 Assessment of Conceptual Model Uncertainty Using Bayesian Model Averaging Method: Theory and Applications, January 14th, Department of Civil and Environmental Engineering, University of California, Berkeley.
- 2010 Multimodel Bayesian Analysis of the Worth of Data, 2010 Fall Meeting of American Geophysical Union, San Francisco, CA.
- 2010 Groundwater Reactive Transport Modeling under Uncertainty, Joint Mathematics Meetings, January 13 16, San Francisco, California.
- 2009 Evaluation of Three Methods of Characterizing Vadose Zone Heterogeneity with Layer Structures, July 7th, U.S. Geological Survey, Boulder Colorado.
- 2009 Assessing and Optimizing the Worth of Information under Model, Parameter and Data Uncertainties, AGU Annual meeting, December 14 18, San Francisco, California.

- 2009 Multi-model Analysis and Averaging using UCODE and MMA with Application of Assessing Geochemical Model Uncertainty at the Naturita Site, Public Meeting and Workshop of the Interagency Steering Committee on Multimedia Environmental Models (ISCMEM), October 13 15.
- 2009 Groundwater model calibration and uncertainty quantification, SIAM Annual Meeting, July 6 10, Denver, Colorado.
- 2008 Use of Groundwater Modeling for Uncertainty Assessment in Hydrogeology: With Application to DOE Offsite Management, Department of Mechanical Engineering, Florida State University.
- 2007 Uncertainty Assessment in Hydrogeology: With Applications at Two DOE Sites, Department of Geological Sciences, Florida State University.
- 2006 Geostatistical Characterization, Upscaling, and Numerical Modeling of a Field Experiment at the DOE Hanford Site, Department of Civil Engineering, Boise State University.
- 2006 Assessment of Radionuclide Transport Uncertainty in Unsaturated Zone of Yucca Mountain, Department of mechanical Engineering, University of Nevada, Las Vegas.
- 2005 Applied Geostatistics in Stochastic and Uncertainty Analysis, Department of Geosciences, University of Nevada, Las Vegas.

NATIONAL/INTERNATIONAL CONFERENCE SESSION CHAIR POSITIONS

2016, Conference Organizing Committee, Annual meeting of International Professionals for the Advancement of Chinese Earth Sciences, Wuhan, China

2015, Convener of two sessions on environmental uncertainty assessment and nutrient modeling in the ASCE EWRI Annual Meeting

2014, Convener and chair of a session on environmental uncertainty assessment in the AGU Annual Meeting

2012, Convener and chair of a session on hydrogeologic uncertainty assessment, Annual meeting of Geological Society of America (GSA)

2004 – 2009, Convener and chair of sessions on environmental uncertainty assessment in the AGU Annual Meetings

2008, Convener and chair of a session on multi-model evaluation in the NGWA Groundwater Summit 2008

2008, Convener and chair of a session on numerical modeling in the Computational Methods in Water Resources Meeting

REVIEWER FOR JOURNALS AND FUNDING AGENCIES

Acta Agriculturae Scandinavica, Section B – Plant Soil Science Advances in Water Resources American Society of Agricultural and biological Engineers Analytical Chemistry ASCE Journal of Hydrologic Engineering Computers & Geosciences Environmental and Engineering Geoscience Environmental Modeling and Software Environmental Engineering Science Environmental Science & Technology Environment, Systems and Decisions Ground Water Geophysical Research Letter GSA Today Hydrogeology Journal Hydrological Processes Hydrology and Earth System Sciences International Journal of Greenhouse Gas Control Journal of Hydrology Journal of Hydrologic Engineering Journal of Coastal Research Journal of Computational Physics Journal of Contaminant Hydrology Journal of Hazardous Materials Journal of Hydroinformatics Journal of Hydrology Journal of Hydrodynamics Mathematical Geosciences Probabilistic Engineering Mechanics Science of the Total Environment SIAM Journal on Scientific Computing SPE Journal Stochastic Environmental Research and Risk Analysis Vadose Zone Hydrology Water Resources Research Department of Energy National Science Foundation U.S. Geological Survey **Elsevier Publisher**

MEMBER OF FSU GRADUATE STUDENT COMMITTEES

- 2016 Huansong Fu, Doctoral student, Department of Computer Science, Florida State University
- 2016 Ryan Learner, Doctoral Candidate, Department of Scientific Computing, Florida State University
- 2016 Philip Boehner, Doctoral Candidate, Department of Scientific Computing, Florida State University
- 2016 Karina Khazmutdinova, Doctoral Candidate, Geophysical Fluid Dynamics Institute, Florida State University
- 2016 Zexuan Xu, Ph.D., Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2015 Ryan Learn, Master, Department of Scientific Computing, Florida State University
- 2015 Bappaditya Nag, Doctoral student, Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2015 Jean Michael Marcelin, Doctoral student, Department of Geography, Florida State University
- 2015 Michael Kozar, Doctoral student, Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2015 Jiaxin Feng, Doctoral student, Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2015 Rui Gu, Ph.D., Department of Scientific Computing, Florida State University
- 2014 Guanyu Tian, Doctoral student, Department of Computer Science, Florida State University
- 2013 David Witman, Master, Department of Computer Science, Florida State University
- 2013 Jeremy A. Sauer, Ph.D., Geophysical Fluid Dynamics Institute, Florida State University
- 2013 Evan Bollig, Ph.D., Department of Scientific Computing, Florida State University
- 2013 Nathan Lay, Ph.D., Department of Scientific Computing, Florida State University
- 2013 Nathan Crock, Master, Department of Scientific Computing, Florida State University
- 2013 Xiaoying Zhang, Ph.D., Department of Earth, Ocean, and Atmospheric Sciences, Florida State University
- 2013 Corey White, Master, Department of Earth, Ocean, and Atmospheric Sciences, Florida State University
- 2012 Francisco Escobar, Ph.D. Candidate, Department of Civil and Environmental Engineering, Florida State University

- 2012 Mamdouh Mohamed, Ph.D., Department of Scientific Computing, Florida State University
- 2012 Guannan Zhang, Ph.D., Department of Scientific Computing, Florida State University
- 2012 Xi Chen, Ph.D., Department of Scientific Computing, Florida State University
- 2012 Detelina Stoyanova, Master, Department of Scientific Computing, Florida State University
- 2012 Rui Gu, Master, Department of Scientific Computing, Florida State University
- 2012 Xizhen Du, Ph.D., Department of Earth, Ocean, and Atmospheric Sciences, Florida State University
- 2011 Nabanita Raha Das, Ph.D., Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2011 Xue Han, Master, Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2011 Josue Gallegos, Master, Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2011 Morgan Askins, Bachelor, Department of Physics, Florida State University
- 2010 Xinya Li, Ph.D., Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2010 Steven Henke, Master, Department of Scientific Computing, Florida State University
- 2010 Juxiu Tong, Ph.D., Department of Earth, Ocean, and Atmospheric Science, Florida State University
- 2009 Luanjing Guo, Master, Department of Geological Sciences, Florida State University
- 2009 Rana Parshad, Ph.D., Department of Mathematics, Florida State University
- 2009 Hill Thompson, Ph.D., Department of Physics, Florida State University
- 2009 Irina Carbone, Ph.D., Department of Chemistry and Biochemistry, Florida State University
- 2009 Yenan Qu, Master, Department of Scientific Computing, Florida State University

MEMBER OF EXTERNAL GRADUATE STUDENT COMMITTEES

- 2016 Tianfang Xu, Ph.D., Department of Civil and Environmental Engineering, University of Illinois, Urbana-Champion
- 2017 Samaneh Sadeghi, Ph.D., Department of Civil and Environmental Engineering, University of Alberta, Canada

LIST OF PUBLICATIONS

Peer-Reviewed Journal Articles (Under Review)

- 1. Elshall, A.S. (*post-doc*), **M. Ye**, G.-Y. Niu, and G.A. Barron-Gafford, Effect of likelihood function selection on Bayesian inversion and uncertainty quantification for microbial soil respiration models, *Journal of Geophysical Research Biogeosciences*, Under Revision.
- 2. Elshall, A.S. (*post-doc*), **M. Ye**, F. Zhang, G.-Y. Niu, and G.A. Barron-Gafford, Relative model score: A unified metric for model ranking, *Stochastic Environmental Research and Risk Assessment*, Under Review.
- 3. Song, X. (*post-doc*), **M. Ye**, X. Chen, Z. Dai, and G. Hammond, Delineating Facies Spatial Distribution by Integrating Ensemble Data Assimilation and Indicator Geostatistics, *Water Resources Research*, Under Review.
- 4. Sayemuzzaman, M. (*post-doc*) and **M. Ye** (2017), Multivariate statistical and trend analyses for surface water quality in the central Indian River Lagoon area, Florida, *Environemtal Earth Sciences*, Under Review.
- 5. Dai, H. (*student*), **M. Ye**, and A.W. Niedoroda, Uncertainty and Sensitivity Analyses for Simulating Barrier Island Geomorphologic Responses to Future Storms and Sea-level Rise, *Journal of Coastal Research*, Under Review.
- 6. Zeng, X. **M. Ye**, J. Wu, D. Wang, and X. Zhu (2017), Improved nested sampling and surrogate-enabled comparison with other marginal likelihood estimators, *Water Resources Research*, Under Review.
- 7. Chen, Z., L. Shi, **M. Ye**, Y. Zhu, and J. Yang, Global sensitivity for identifying important parameters of nitrogen nitrification and denitrification under model and scenario uncertainty, *Water Resources Research*, Under Revision.
- 8. Xiao, L., **M. Ye**, and Y. Xu (2017), A new solution for confined-unconfined flow toward a fully penetrating well in a confined aquifer, Ground Water, Under Review.
- 9. Samani, S., **M. Ye**, F. Zhang, G. Tang, A.S. Elshall, and A.A. Moghaddam, Impacts of Prior Parameter Distributions on Statistical Evaluation of Model Complexity, *Water Science and Engineering*, Under Review.
- 10. Mo, S., D. Lu, X. Shi, G. Zhang, **M. Ye**, J. Wu, and J. Wu (2017), A Talour expansion-based adaptive design strategy for global surrogate modeling with applications in multiphase flow simulation, *Water Resources Research*, Under Revision.
- Zhang, H., F. Zhang, G. Zhang, Y. Ma, K. Yang, and M. Ye (2017), Evaluation of daily air temperature estimation on glacier surface in Tibetan plateau using MODIS LST data, *Journal of Geophysical Research – Atmosphere*, Under Review.

Peer-Reviewed Journal Articles (Published)

2017 (12 papers)

74. Mao, W., J.Z. Yang, Y. Zhu, **M. Ye**, and J.W. Wu (2017), Loosely coupled SaltMod for simulating groundwater and salt dynamics under well-canal conjunctive irrigation in semi-arid areas, Agricultural Water Management, 192, 209-220, DOI: 10.1016/j.agwat.2017.07.012.

- 73. Samani, S, Moghaddam, A.A., and **M. Ye** (2017), Investigating the effort of complexity on groundwater flow modeling uncertainty, *Stochastic Environmental Research and Risk Assessment*, DOI 10.1007/s00477-017-1436-6.
- 72. Ma, Y., Q. Zhang, and M. Ye (2017), Mean-square dissipativity of numerical methods for a class of resource-competition models with fractional Brownian motion, *Systems Science & Control Engineering*, 5:1, 268-277, DOI: 10.1080/21642583.2017.1333469
- 71. Zhang, Q., **M. Ye**, H. Lei, and Q. Jin (2017), Asymptotic behavior of a class of resources competition biology species system by the fractional Brownian motion, the ANZIAM Journal, 58, 3-4, 491-499, DOI: 10.1017/S1446181117000098
- 70. Song, X., **M. Ye**, and K. Wang (2017), Strain localization in a solid-water-air system with random heterogeneity via stabilized mixed finite elements, *Internal Journal for Numerical Methods in Engineering*, DOI: 10.1002/nme.5590.
- 69. Pacheco-Castro, R. (*student*), J. Pacheco-Avila, **M. Ye**, A. Cabrera Sansoers, (2017), Groundwater quality: analysis of its temporal and spatial variability in a karst aquifer, *Ground Water*, doi: 10.1111/gwat.12546.
- 68. Xu, T., A. J. Valocchi, **M. Ye**, and F. Liang (2017), Quantifying model structural error: Efficient Bayesian calibration of a regional groundwater flow model using surrogates and a data-driven error model, Water Resour. Res., 53, doi:10.1002/2016WR019831.
- 67. Dai, H., X. Chen, **M. Ye**, X. Song, and J. M. Zachara (2017), A geostatisticsinformed hierarchical sensitivity analysis method for complex groundwater flow and transport modeling, Water Resour. Res., 53, doi:10.1002/2016WR019756.
- 66. Xu, T., A. J. Valocchi, **M. Ye**, F. Liang, and Y.-F. Lin (2017), Bayesian calibration of groundwater models with input data uncertainty, Water Resour. Res., 53, doi:10.1002/2016WR019512.
- 65. Dai, H. (*student*), **M. Ye**, A.P. Walker, and X. Chen (2017), A new process sensitivity index to identify important system processes under process model and parametric uncertainty, *Water Resources Research*, 53, DOI: 10.1002/2016WR019715.
- 64. Song, X., K. Wang, and **M. Ye** (2017), Localized failure in unsaturated soils under non-isothermal conditions, *Acta Geotechnica*, DOI 10.1007/s11440-017-0534-4.
- 63. Zhu, Y. (*post-doc*), L. Shi, **M. Ye**, and J. Yang (2017), Development and application of a fully integrated model for saturated-saturated nitrogen reactive transport, *Agricultural Water Management*, 180, 35-49. http://dx.doi.org/10.1016/j.agwat.2016.10.017.
- 62. **Ye, M.**, H. Sun, and K. Hallas (2017), Numerical Estimation of Nitrogen Load from Septic Systems to Surface Water Bodies in St. Lucie River and Estuary Basin, Florida, *Environmental Earth Sciences*, 76(1), 1-14, doi:10.1007/s12665-016-6358-y.

2016 (10 papers)

61. Cao, B., Q. Zhang, and **M. Ye** (2016), Exponential stability of impulsive stochastic genetic regulatory networks with time-varying delays and reaction-diffusion, *Advances in Difference Equations*, 307, DOI:10.1186/s13662-016-1033-x.

- 60. Zhang, H., F. Zhang, M. Ye, T. Che, and G. Zhang (2016), Estimating daily air temperatures over the Tibetan Plateau by dynamically integrating MODIS LST data, *Journal of Geophysical Research Atmospheres*, 121, 11,425–11,441, doi:10.1002/2016JD025154.
- 59. Zhu, Y. (*post-doc*), L. Shi, J. Wu, **M. Ye**, L. Cui, and J. Yang (2016), Regional quasi-three-dimensional unsaturated-saturated water flow model based on a vertical-horizontal splitting concept, *Water*, 8(5), 195, doi:10.3390/w8050195.
- 58. **Ye, M.**, L. Wang (*post-doc*), K.F. Pohlmann, and J.B. Chapman (2016), Estimate groundwater interbasin flow using multiple models and multiple types of calibration data, *Ground Water*, 54(6), 805-817, doi:10.1111/gwat.12422.
- 57. Fatehnia, M., K. Tawfiq, M. Ye (2016), Estimation of saturated hydraulic conductivity from double-ring infiltrometer measurements, European Journal of Soil Science, 67, 135 147, doi:10.1111/ejss.12322.
- 56. McLaughlin, B. (*student*), J. Peterson, M. Ye (2016), Stabilized reduced order models for the advection-diffusion-reaction equation using operator splitting, Computers and Mathematics with Applications, 71(11), 2407-2420, 10.1016/j.camwa.2016.01.032.
- 55. Liu, P. (*post-doc*), A.S. Elshall (*post-doc*), **M. Ye**, P. Beerli, X. Zeng, D. Lu, and Y. Tao (2016), Evaluate marginal likelihood with thermodynamic integration method and comparison with several other numerical methods, *Water Resources Research*, 52, doi:10.1002/2014WR016718.
- 54. Zeng, X. (*post-doc*), **M. Ye**, J. Burkardt, J. Wu, and D. Wang (2016), Evaluating two sparse grid surrogates and two adaptation criteria for groundwater Bayesian uncertainty analysis, *Journal of Hydrology*, 535, 120-134, DOI: 10.1016/j.jhydrol.2016.01.058.
- 53. Zhu, Y. (*post-doc*), **M. Ye**, E. Roeder, R.W. Hicks, L. Shi, and J. Yang (2016), Estimating ammonium and nitrate Load from septic systems to surface water bodies within ArcGIS environments, Journal of Hydrology, 532, 177-192, DOI: 10.1016/j.jhydrol.2015.11.017.
- 52. Hill, M.C., D. Kavetski, M. Clark, **M. Ye**, M. Arabi, D. Lu, L. Foglia, and S. Mehl (2016), Practical use of computationally frugal model analysis methods, *Ground Water*, 54 (2), 159-170, doi: 10.1111/gwat.12330.

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- Lu, D. (*post-doc*), M. Ye, and G.P. Curtis (2015), Maximum Likelihood Bayesian Model Averaging and its Predictive Analysis for Groundwater Reactive Transport Models, *Journal of Hydrology*, 529, 1859 – 1873, DOI:10.1016/j.jhydrol.2015.07.029.
- Dai, H. (*student*) and M. Ye (2015), Variance-Based Global Sensitivity Analysis for Multiple Scenarios and Models with Implementation Using Sparse Grid Collocation, *Journal of Hydrology*, 528, 286 – 300, DOI:10.1016/j.jhydrol.2015.06034.

- 49. Dai, H. (*student*), **M. Ye**, A.W. Niedoroda (2015), A model for simulating barrier island geomorphologic responses to future storm and sea-level rise impacts, *Journal of Coastal Research*, DOI: 10.2112/JCOASTRES-D-14-00094.1.
- 48. Song, X., J. Zhang, C. Zhan, Y. Xuan, **M. Ye**, C. Xu (2015), Global sensitivity analysis in hydrological modeling: Review of concepts, methods, theoretical framework, and applications, *Journal of Hydrology*, 523(4), 739-757, doi:10.1016/j.jhydrol.2015.02.013.
- 47. Elshall, A.S. (*post-doc*), H.V. Pham, F.T.C. Tsai, L. Yan, and **M. Ye** (2015), Parallel inverse modeling and uncertainty quantification for computationally demanding groundwater flow models using covariance matrix adaptation, ASCE Journal of Hydrologic Engineering, DOI: 10.1061/(ASCE)HE.1943-5584.0001126, 04014087.
- 46. Zhang, F., H.B. Zhang, S.C. Hagen, **M. Ye**, D.B. Wang, D.W. Gui, C. Zeng, L.D. Tian, and J.S. Liu (2015), Snow cover and runoff modelling in a high mountain catchment with scarce data: effects of temperature and precipitation parameters, 29(1), 52-65, *Hydrological Processes*, DOI: 10.1002/hyp.10125.

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- 45. Zhang, X., G.-Y. Niu, A. S. Elshall, **M. Ye**, G. A. Barron-Gafford, and M. Pavao-Zuckerman (2014), Assessing five evolving microbial enzymemodels against fieldmeasurements from semiarid savannah – What are the mechanisms of soil respiration pulses? Geophys. Res. Lett., 41(18), 6428-6434, doi:10.1002/2014GL061399.
- 44. **Ye, M.**, J.F. Rios (*student*), and L. Shi (2014), A new ArcGIS-based software of uncertainty analysis for nitrate load estimation, Groundwater, 52(5), 649-650, doi: 10.1111/gwat.12228.
- 43. Lu, D. (*student*), **M. Ye**, M.C. Hill, E.P. Poeter, and G.P. Curtis (2014), Integration of Markov chain Monte Carlo simulation into UCODE for Bayesian uncertainty analysis, Environmental Modeling and Software, 60, 45-56, http://dx.doi.org/10.1016/j.envsoft.2014.06.002.
- 42. Shi, X. (*post-doc*), **M. Ye**, G.P. Curtis, G.L. Miller, P.D. Meyer, M. Kohler, S. Yabusaki, and J. Wu (2014), Assessment of parametric uncertainty for groundwater reactive transport modeling, Water Resour. Res., 50(5), 4416-4439, doi:10.1002/2013WR013755.
- 41. Song, X. (*student*), L. Shi, **M. Ye**, J. Yang, and I.M. Navon (2014), Numerical comparison of iterative ensemble Kalman filter for unsaturated flow inverse modeling, *Vadose Zone Journal*, 13(2), NIL_2-NIL_13, doi:10.2136/vzj2013.05.0083.

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40. Zhang, G. (*student*), D. Lu (*student*), **M. Ye**, M. Gunzburger, and C. Webster (2013), An adaptive sparse-grid high-order stochastic collocation method for Bayesian inference in groundwater reactive transport modeling, *Water Resour. Res.*, 49, doi:10.1002/wrcr.20467.

- 39. Lu, D. (*student*), **M. Ye**, P.D. Meyer, G.P. Curtis, X. Shi, X.-F. Niu, and S.B. Yabusaki (2013), Effect of error covariance structure on estimation of model averaging weights and predictive performance, *Water Resources Research*, 49, 1-20, doi:10.1002/wrcr.20441.
- 38. Wang, L. (*post-doc*), **M. Ye**, P.Z. Lee, and R.W. Hicks (2013), Management of nitrogen contamination using VZMOD: a vadose zone model for simulation of nitrogen transformation and transport, *Environment, Systems & Decisions*, doi: 10.1007/s10669-013-9445-6
- 37. Wang, L. (*post-doc*), **M. Ye**, J.F. Rios, R. Fernandes, P.Z. Lee, and R.W. Hicks (2013), Estimation of nitrate load from septic systems to surface water bodies using an ArcGIS-based software, *Environmental Earth Sciences*, DOI:10.1007/s12665-013-2283-5.
- 36. Zha, Y. (*student*), L. Shi, **M. Ye**, and J. Yang (2013), A general Ross method for two- and three-dimensional variably saturated flow, *Advances in Water Resources*, 54, 67 77, doi:10.1016/j.advwatres.2013.01.002.
- 35. Deng, H. (*student*), Z. Dai, A.V. Wolfsberg, **M. Ye**, P.H. Stauffer, Z. Lu, and E. Kwicklis (2013), Upscaling Retardation Factor in Hierarchical Porous Media with Multimodal Reactive Mineral Facies, *Chemosphere*, 91(3), 248 257, doi:10.1016/j.chemosphere.2012.10.105.
- Rios, J.F. (*student*), M. Ye, L. Wang, P.Z. Lee, H. Davis, and R.W. Hicks (2013), ArcNLET: A GIS-based software to simulate groundwater nitrate load from septic systems to surface water bodies, *Computers and Geosciences*, 52, 108-116, doi:10.1016/j.cageo.2012.10.003.

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- 33. Zhu, Y. (*student*), L. Shi, L. Lin, J. Yang, **M. Ye** (2012), A Fully Coupled Numerical Modeling for Regional Unsaturated-Saturated Water Flow, *Journal of Hydrology*, 475, 188-203, doi:10.1016/j.jhydrol.2012.09.048.
- 32. Lu, D. (*student*), M. Ye, and M.C. Hill (2012), Analysis of Regression Confidence Intervals and Bayesian Credible Intervals for Uncertainty Quantification, *Water Resources Research*, 48, W09521, doi:10.1029/2011WR011289.
- 31. Gupta, H. V., M. P. Clark, J. A. Vrugt, G. Abramowitz, and **M. Ye** (2012), Towards a comprehensive assessment of model structural adequacy, *Water Resources Research*, 48, W08301, doi:10.1029/2011WR011044.
- 30. Shi, X. (*post-doc*), **M. Ye**, S. Finsterle, and J. Wu, Comparing nonlinear regression and Markov chain Monte Carlo methods for assessment of predictive uncertainty in vadose zone modeling, *Vadose Zone Journal*, 11(4), doi:10.2136/vzj2011.0147.
- 29. Lu, D. (*student*), **M. Ye**, S.P. Neuman, and L. Xue (2012), Multimodel Bayesian analysis of data-worth applied to unsaturated fractured tuffs, Advances in Water Resources, 35, 69-82, DOI: 10.1016/j.advwatres.2011.10.007.

- 28. Neuman, S.P., L. Xue, **M. Ye**, and D. Lu (2012), Bayesian analysis of data-worth considering model and parameter uncertainties, Advances in Water Resources, 36, 75-85, doi:10.1016/j.advwatres.2011.02.007.
- Dai, Z., A. Wolfsberg, P. Reimus, H. Deng, E. Kwicklis, M. Ding, D. Ware, and M. Ye (2012), Identification of sorption processes and parameters for radionuclide transport in fractured rock, Journal of Hydrology, 414-415, January, 220-230, doi/10.1016/j.jhydrol.2011.10.035.

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- 26. Lu, D. (*student*), **M. Ye**, and S.P. Neuman, Dependence of Bayesian model selection criteria and Fisher information matrix on sample size, *Mathematical Geosciences*, 43, 971-993, DOI 10.1007/s11004-011-9359-0.
- 25. Rios, J.F. (*student*), **M. Ye**, and L. Wang (2011), uWATER-PA: Ubiquitous WebGIS Analysis Toolkit for Extensive Resources Pumping Assessment, *Ground Water*, 49, 776-780, DOI: 10.1111/j.1745-6584.2011.00872.x.
- 24. Gautam, M.R., J. Zhu, and **M. Ye**, Regularized artificial neural network training for biased soil hydraulic parameters, *Soil Science*, 176(11), 567-575, doi: 10.1097/SS.0b013e3182316c93.
- 23. Pan, F. (*student*), J. Zhu, **M. Ye**, Y.A. Pachepsky, Y.-S. Wu (2011), Sensitivity analysis of unsaturated flow and contaminant transport with correlated parameters, *Journal of Hydrology*, 397, 238-249, doi:10.1016/j.jhydrol.2010.11.045.

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- 22. **Ye, M.**, K.F. Pohlmann, J.B. Chapman, G.M. Pohll, and D.M. Reeves (2010), A model-averaging method for assessing groundwater conceptual model uncertainty, *Ground Water*, doi:10.1111/j.1745-6584.2009.00633.x.
- 21. Ye, M., D. Lu, S. P. Neuman, and P. D. Meyer (2010), Comment on "Inverse groundwater modeling for hydraulic conductivity estimation using Bayesian model averaging and variance window" by Frank T.-C. Tsai and Xiaobao Li, *Water Resources Research*, 46, W02801, doi:10.1029/2009WR008501.
- 20. **Ye, M.,** P.D. Meyer, Y.-F. Lin, and S.P. Neuman (2010), Quantification of model uncertainty in environmental modeling, *Stochastic Environmental Research and Risk Assessment*, DOI 10.1007/s00477-010-0377-0 (preface to a special issue).
- 19. Wu, Y-S, **M. Ye**, E.A. Sudicky, (2010), Fracture-flow-enhanced matrix diffusion in solute transport through fractured porous media, *Transport in Porous Media*, 81, 21-24, doi:10.1007/s11242-009-9383-4.
- 18. **Ye, M.** (2010), MMA: A computer code for multi-model analysis, *Ground Water*, 48(1), 9 12, doi: 10.1111/j.1745-6584.2009.00647.x (invited software review).
- Deng, H. (*student*), Z. Dai, A. Wolfsberg, Z. Lu, M. Ye, and P. Reimus (2010), Upscaling of reactive mass transport in fractured rocks with multimodal reactive mineral facies, *Water Resources Research*, 46, W06501, doi:10.1029/2009WR008363.

16. Reeves, D.M., K.F. Pohlmann, G.M. Pohll, **M. Ye**, J.B. Chapman (2010), Incorporation of conceptual and parametric uncertainty into radionuclide flux estimates from a fractured granite rock mass, *Stochastic Environmental Research and Risk Assessment*, 24(6), 899-915, doi:10.1007/s00477-010-0385-0.

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- 15. **Ye, M.**, Cooper, C.A., Chapman, J.B., Gillespie, D., and Zhang, Y. (2009), A Geologically Based Markov Chain Model for Simulating Tritium Transport With Uncertain Conditions in a Nuclear-Stimulated Natural Gas Reservoir. *SPE Reservoir Evaluation & Engineering*, 12(6), 974-984. SPE-114920-PA. doi: 10.2118/114920-PA.
- 14. Deng, H. (*student*), **M. Ye**, M. G. Schaap, and R. Khaleel (2009), Quantification of uncertainty in pedotransfer function-based parameter estimation for unsaturated flow modeling, *Water Resources Research*, 45, W04409, doi:10.1029/2008WR007477.
- 13. Pan, F. (*student*), M. Ye, J. Zhu, Y.S. Wu, B. Hu, Z. Yu (2009), Incorporating layer- and local-scale heterogeneities in numerical simulation of unsaturated flow and tracer transport, *Journal of Contaminant Hydrology*, 103 (3-4), 194-205, doi:10.1016/j.jconhyd.2008.10.012.
- 12. Pan, F. (*student*), **M. Ye**, J. Zhu, Y.S. Wu, B. Hu, Z. Yu (2009), Numerical evaluation of uncertainty in water retention parameters and effect on predictive uncertainty, *Vadose Zone Journal*, 8, 158-166, doi:10.2136/vzj2008.0092.
- 11. Huang, C. (*student*), B. Hu, X. Li, **M. Ye** (2009), Using data assimilation method to calibrate a heterogeneous conductivity field and improve solute transport prediction with an unknown contaminant source, *Stochastic Environmental Research and Risk Analysis*, 23(8), 1155-1167, doi 10.1007/s00477-008-0289-4.

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- 10. **Ye, M.**, and R. Khaleel (2008), A Markov chain model for characterizing medium heterogeneity and sediment layering structure, *Water Resources Research*, 44, W09427, doi:10.1029/2008WR006924.
- 9. Ye, M., K.F. Pohlmann, J.B. Chapman (2008), Expert elicitation of recharge model probabilities for the Death Valley regional flow system, *Journal of Hydrology*, 354, 102-115, doi:10.1016/j.jhydrol.2008.03.001.
- 8. **Ye, M.**, P.D. Meyer, and S.P. Neuman (2008), On model selection criteria in multimodel analysis, *Water Resources Research*, 44, W03428, doi:10.1029/2008WR006803.

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7. Ye, M., R. Khaleel, M. G. Schaap, and J. Zhu (2007), Simulation of field injection experiments in heterogeneous unsaturated media using cokriging and artificial neural network, *Water Resources Research*, 43, W07413, doi:10.1029/2006WR005030.

6. **Ye, M.**, F. Pan, Y.S. Wu, B. Hu, C. Shirley, Z. Yu (2007), Assessment of radionuclide transport uncertainty in the unsaturated zone at Yucca Mountain, *Advances in Water Resources*, 30, 118-134, doi:10.1016/j.advwatres.2006.03.005.

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- 5. Ye, M., S.P. Neuman, P.D. Meyer, and K.F. Pohlmann (2005), Sensitivity analysis and assessment of prior model probabilities in MLBMA with application to unsaturated fractured tuff, *Water Resources Research*, 41, W12429, doi:10.1029/2005WR004260.
- 4. **Ye, M.**, R. Khaleel, and T.-C. J. Yeh (2005), Stochastic analysis of moisture plume dynamics of a field injection experiment, *Water Resources Research*, 41, W03013, doi:10.1029/2004WR003735.
- 3. Yeh, T.-C. J., **M. Ye**, and R. Khaleel (2005), Estimation of effective unsaturated hydraulic conductivity tensor using spatial moments of observed moisture plume, *Water Resources Research*, 41, W03014, doi:10.1029/2004WR003736.

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- 2. **Ye, M.**, S.P. Neuman, and P.D. Meyer (2004), Maximum likelihood Bayesian averaging of spatial variability models in unsaturated fractured tuff, *Water Resources Research*, 40, W05113, doi:10.1029/2003WR002557.
- 1. **Ye, M.**, S. P. Neuman, A. Guadagnini, and D. M. Tartakovsky (2004), Nonlocal and localized analyses of conditional mean transient flow in bounded, randomly heterogeneous porous media, *Water Resources Research*, 40, W05104, doi:10.1029/2003WR002099.

Book Chapters

1. **M. Ye** and M.C. Hill (2017), Global Sensitivity Analysis for Uncertain Parameters, Models, and Scenarios, Chapter 10 in the book: Sensitivity Analysis in Earth Observation Modeling, edited by G.P. Petropoulos and P.K. Srivastava, Elsevier, Amsterdam.

Peer-Reviewed Technical Reports

- 1. Pohlmann, K. and M. Ye (2012), Numerical Simulation of Inter-basin Groundwater Flow into Northern Yucca Flat, Nevada National Security Site, Using the Death Valley Regional Flow System Model, Nevada Site Office, National Nuclear Security Administration, U.S. Department of Energy, DOE/NV/26383-18.
- 2. **Ye, M.**, F. Pan, B. Hu, and J. Zhu (2007), Geostatistical and Stochastic Study of Flow and Tracer Transport in the Unsaturated Zone at Yucca Mountain, Nevada System of Higher Education, TR-07-003 (available at http://hrc.nevada.edu/QA/Report/TR-07-003.pdf).
- 3. Meyer, P.D., **M. Ye**, M.L. Rockhold, S.P. Neuman, K.J. Cantrell (2007), *Combined Estimation of Hydrogeologic Conceptual Model, Parameter, and Scenario Uncertainty*, NUREG/CR-6940, PNNL-16396, U.S. Nuclear Regulatory

Commission, Office of Nuclear Regulatory Research (available at http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6940/).

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- 5. K. Pohlmann, **M. Ye**, D. Reeves, M. Zavarin, D. Decker, J. Chapman (2007), *Groundwater Flow and Radionuclide Transport through the Climax Stock*, Nevada Test Site, Nevada Site Office, National Nuclear Security Administration, U.S. Department of Energy (available at http://www.osti.gov/bridge/servlets/purl/922626-qd85uE/922626.PDF).
- 6. Cooper, C., M. Ye, J. Chapman, and C. Shirley (2005), *Radionuclide Migration at the Rio Blanco Site, A Nuclear-simulated Low-permeability Gas Reservoir*, DRI Publication 4520, Las Vegas, NV.
- 7. P.D. Meyer, **M. Ye**, and S.P. Neuman (2005), *Incorporating Scenario Uncertainty in Hydrogeologic Modeling*, PNNL-15427, Pacific Northwest National Laboratory, Richland, WA.
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Conference Proceedings

- 1. Greene, J.A., R.M. Neupauer, **M. Ye**, J.R. Kasprzyk, D.C. Mays, G.P. Curtis (2017), Engineered injection and extraction for remediation of uraniumcontaminated groundwater, 111-118, Proceedings of the 16th Annual World Environmental and Water Resources Congress, Edited by C.S. Pathak and D. Reinhart, American Society of Civil Engineers, Environmental & Water Resources Institution, Sacramento, CA.
- Pacheco, R., Ye, M., Wang, X. (2017), Numerical simulation of karst groundwater flow at laboratory scale. In U.S. Geological Survey Karst Interest Group Proceedings, San Antonio, Texas, May 16 – 18, 2017, Edited by E.L. Kuniansky and L.E. Spangler. U.S. Geological Survey Scientific Investigations Report 2017–5023, 245 p., http://doi.org/10.3133/sir20175023
- Liu, X., A.B. Chan-Hilton, M. Ye (2016), Exploring Impacts of Interpolation Methods on Groundwater Monitoring Optimization, 347-356, Proceedings of the 16th Annual World Environmental and Water Resources Congress, Edited by C.S. Pathak and D. Reinhart, American Society of Civil Engineers, Environmental & Water Resources Institution, West Palm Beach, FL.
- 4. Tao, X., M. Ye, X. Wang, D. Wang, R. Pacheco Castro, J. Zhao (2015), Experimental and Numerical Investigation of Sinkhole Development and

Collapse, 501-506, Proceedings of the 14th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst, edited by D.H. Doctor, L. Lands, and J.B. Stephenson, National Cave and Karst Research Institute, Carlsbad, New Mexico.

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- 2. Greene, J.A., R.M. Neupauer, **M. Ye**, J.R. Kasprzyk, D.C. Mays, and G.P. Curtis (2017), Engineered Injection and Extraction for Remediation of Uranium-Contaminated Groundwater, Annual Conference of the World Environmental & Water Resources Congress, May 21-25, Sacramento, CA.
- 3. **Ye, M.**, A.S. Elshall, G. Tang, and S. Samani (2016), Making Steppingstones out of Stumbling Blocks: A New Bayesian Model Evidence Estimator with Application to Groundwater Model Selection, AGU meeting, December 12 16, San Francisco, CA.
- 4. Zeng, X., **M. Ye**, J. Wu, D. Wang, and J. Liu (2016), Improving and Evaluating Nested Sampling Algorithm for Marginal Likelihood Estimation, AGU meeting, December 12 16, San Francisco, CA.
- 5. Xu, T., A.J. Valocchi, **M. Ye**, and F. Liang (2016), A Fast Surrogate-facilitated Data-driven Bayesian Approach to Uncertainty Quantification of a Regional Groundwater Flow Model with Structural Error, AGU meeting, December 12 16, San Francisco, CA.
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- 7. Pacheco-Castro, R.B., **M. Ye**, X. Tao, and J. Zhao (2016), Karst Flow Modeling and Model Validation at Laboratory Scale, AGU meeting, December 12 16, San Francisco, CA.

- 8. Mo, S., D. Lu, X. Shi, G. Zhang, **M. Ye**, J. Wu, and J. Wu (2016), An efficient adaptive sampling strategy for global surrogate modeling with applications in multiphase flow simulation, AGU meeting, December 12 16, San Francisco, CA.
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- 18. Zeng, X., **M. Ye**, and J. Wu (2015), Evaluating two sparse grid surrogates for Bayesian uncertainty quantification, Annual Coneference of the World Environmental & Water Resources Congress, May 17-21, Austin, Texas.
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- 69. Zhang, F., J. Parker, **M. Ye**, G. Tang, W. Wu, T. Mehlhorn, T.M. Gihring, C. Schadt, D.B. Watson, S.C. Brooks (2010), Simulation of In-Situ Uranium

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- 70. Rios F., **M. Ye**, P. Lee, R. Fernandes, T. Zhao, and A. Chan-Hilton, Estimation of Hydrologic Environmental Impacts of Nitrate Contamination from Energy Biomass Resources Development, FESC Summit 2010, September 28-29, Orlando, Florida.
- 71. **Ye, M.**, D. Lu, G. Miller, G.P. Curtis, P.D. Meyer, and S.B. Yabusaki (2010), Assessment of predictive uncertainty in coupled groundwater reactive transport modeling, Goldschmidt 2010 Conference, June 13-18, Knoxville, Tennessee.
- 72. Rios, F. (student), **M. Ye**, P. Lee, R. Fernandes, T. Zhao (2010), Developing an ArcGIS Extension for Estimating Nitrate Fate and Transport, ESRI Southeast Regional User Group Conference, April 26-28, Charlotte, NC.
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- 74. **Ye, M.** and D. Lu (2009), On Model Selection Criteria and Model Complexity, 2009 AGU annual meeting, San Francisco, California.
- 75. Neuman, S.P. and **M. Ye** (2009), Assessing and optimizing the worth of information under model, parameter and data uncertainties, 2009 AGU annual meeting, San Francisco, California.
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- 90. Ye, M., and D. Lu (*student*) (2008), Comparison of Laplace approximation and Monte Carlo methods for Bayesian model selection and multimodel averaging, Computational Methods in Water Resources, XVII International Conferences, July 6 – 10, San Francisco, California.
- 91. Pan, F. (*student*), J. Zhu, **M. Ye**, and Z. Yu, Effect of water retention parameter uncertainty on unsaturated flow in heterogeneous fractured rocks, Nevada Water Resources Association Annual Meeting, March 4 6, Mesquite, Nevada.
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