Resume

Zhongbo Yu
Department of Geoscience
University of Nevada
Las Vegas, NV 89154
(Office): (702) 895-3262
(Home): (702) 431-0047
(Fax): (702) 895-4064

EDUCATION

Post Doc June 1997

The Pennsylvania State university University Park, PA

Ph.D. (GPA 3.8/4.0) December 1996

The Ohio State university Columbus, Ohio

Major: Hydrogeology / Groundwater Contamination.

Minor: Computer Science / Mathematical Numerical Method.

Courses: Field Hydrogeology, Contaminant Hydrogeology, Groundwater Modeling, Contaminant Remediation, Contaminant Transport Modeling, Aqueous Chemistry, Organic Environment Chemistry, Environment Isotope, Numerical Method, Finite Element Method, High Performance Computing, Computer Graphics, Watershed Hydrology.

M.S. in Hydrogeology (GPA 3.7/4.0) December 1992

University of Southern Mississippi Hattisburg, MS

Major: Engineering Geology and Hydrogeology.

Minor: Computer Science.

Courses: Engineering Geology, Hydrogeology, Groundwater Hydrology, Applied hydrogeochemistry, Pascal Programming, Assembly, Artificial Itenlligence, Computer Aided Drafting and Design.

B.S. in Geological Engineering (GPA 3.9/4.0) June 1983

Hohai (hehai) University Nanjing, JS

Major: Geological Engineering and hydrogeology.

Minor: Soil Mechanics and Rock Mechanics.

Courses: See details on Transcript.

AWARDS

University Fellow, The Ohio State University for 93-94.

Silver Medal, State Youth Math Competition in 1979.

MEMBERSHIP

American Geophysical Union.

Geological Society of America.

National Ground Water Association.

American Water Resources Association.

The Society for Computer Simulation.

EMPLOYMENT

Asst. Prof. Department of Geoscience 08/99-present

University of Nevada Las Vegas, NV

Research Scientist at Earth System Science Center 12/96 - 08/99

The Pennsylvania State University University Park, PA

Model development, modeling study on the interactions among climate, surface water, subsurface unsaturated zone, and groundwater, flow and mass transport modeling

Research Associate in Hydrogeology program 06/93 - 12/96

The Ohio State University Columbus, OH

Model development, flow and mass transport modeling, contaminant remediation, automated calibration

Research Assistant in Engineering Geology of Continental Shelf 08/92 - 05/93

Center for Marine Science at Stennis Space Center Space Center, MS

Modeling of hydrostatic pressure change due to tide wave, chemical and XRD analysis of clay minerals

Teaching Assistantship (Lab Instructor) in Geology 08/92 - 07/92

University of Southern Mississippi Hattiesburg, MS

Engineering investigation of clay minerals, impact of knick point migration of Mississippi River

Professional Engineer and Project Head in Geotechnical Engineering 08/88 - 07/90

East Hydro-electric Power Investigation and Design InstituteHangzhou, China

Research in hydrogeology, engineering geology, and geotechnics related to reservoir, dam, foundation

Engineer and Project Head in Hydrogeology and Engineering Geology 08/83 - 07/90

East Hydraulic-electric Power Investigate and Design Institute Hangzhou, JZ

Conducted Research on Engineering Geology, Geotechnics, Hydrogeology, Hydraulic-electric Construction, Soil and Rock field experiments, Hydrogeologic filed experiments

---

SKILLS

- Aquifer performance testings, grout testings, soil and rock triaxial strength testings, lab and field geotechnical testings, and routine chemical analysis of surface water and groundwater.
- Experience using MODFLOW, MODPATH, MODPATH-PLOT, MT3D, SWIFT, SURFER,GRAPHER for groundwater flow and contaminant transport modeling, SWRRB for surface water hydrology and quality simulation, and ARC/INFO and ERDAS GIS systems.
- Pumping test design, wellhead protection design, and remedial scheme design.
- Extensive programming experience using Fortran, C/C++, Pascal, Assembly, and Basic on PCs, Unix workstations (DEC, SUN, SGI), and Supercomputers (Cray Y-MP and T3D).
- Training on ERDAS GIS, vectorization on Cray Y-MP, and parallelization on Cray Y-MP andT3D.
- Graphic programming experience using C, X-window (X11), object-oriented Motif on Unixsystem.
- Visualization of data and results using developed codes, AVS, IRIS Explorer, and SpyGlass.

EXPERIENCES

- Development of an automated calibration for groundwater flow modeling in large watersheds (1996-).
- Chemical analysis and mixing model development for baseflow separation on streamflows (1996- .
- Image processing for generating detailed concentration distributions from photographic dataof flow tank experiments where the contaminant plumes can be observed (1995-present).
- Development of 2-D and 3-D finite-difference flow code (PVTEST) on vector-parallel surpercomputers for simulating groundwater flow in large watersheds (1993-present).
- Application of code PVTEST on Hellbranch Run, OH for simulations of groundwater and hydrograph (1993-1994).
- Development of Basin-Scale Hydrologic Model (BSHM) incorporating information of climate,topography, land use and land cover, surface water, and groundwater. BSHM includes four modules: Soil Moisture Budget Model, Digital Elevation Generator, Surface Runoff Delay Time model, and Groundwater Flow Model (1993-present).

- Application of BSHM for studying the effect of grid size on surface water and groundwater simulations on Big Darby Creek, OH (1994-1995).
- Application of BSHM for simulating hydrologic processes such as evapotraspiration, surface runoff, groundwater flow, and stream-aquifer interaction on Hellbranch Run (1994-present).
- Pumping testing, slug testing, field contaminant sampling, and data analysis (1995).
- Study on instability effect of mud flow on engineering construction at continental shelf and estuary area (1992-1993).
- Engineering investigation and mineralogy study of Yazoo clay in Mississippi (1990-1992).
- Study on knick point migration of Mississippi River due to sea lever change (1990-1991).
- Building designing and construction supervising on five-story apartment complex (1986-1990).
- Study on slope instability and land sliding on reservoirs due to water lever raising (1984-1986).
- Engineering geological investigation on sites of hydraulic-electric Power Dams (1983-1987).
- Field and lab experiments on sand liquefaction under extremely high pressure (1983-1985).
- Aquifer characterization, site investigation, and risk assessment (1983-1990).

PROFESSIONAL SERVICE

Member, Large-Scale Field Experimentation Committee of American Geophysical Union, 1998-present.

Editor, Journal of Global and Planetary Change, the special issue of " Regional Climate - Hydrology Interactions", 1998-present.

Invited Presentation. A coupled distributed hydrologic modeling system. American Association for the Advancement of Science (AAAS) Annual Meeting and Science Innovation Exposition, 1998.

Chair, H11F and H12B - Integrated Study of Regional Climate and Hydrology in Basin-Scale Field Experiments (I, II), AGU Fall Metting, San Francisco, 1997.

Convenor, H04 - Integrated Study of Regional Climate and Hydrology in Basin-Scale Field Experiments, AGU Fall Metting, San Francisco, 1997.

Invited Lecture. Modeling study of regional hydrologic processes in the Susquehanna River Basin. Department of Meteorology, The Pennsylvania State University, 1997.

Judge, Hydrology Section Student Presentation, AGU Spring Meeting, Baltimore, May, 1997; San Francisco, Dec., 1997; AGU Spring Meeting, Boston, May, 1998.

REVIEWED PAPERS

Yu, Z., and T.N. Carlson, 1999. On evaluating the spatial-temporal variation of soil moisture in the Susquehanna River Basin. Water Resources Research, in review.

Yu, Z., Shangguan, X., D. Pollard, and E.J. Barron, 1999. On examining methane emission processes in a wetland rice field.. Global Biogeochemical Cycle, in review.

Yu, Z., Y. Guo, J. Voortman, R. White, and D.A. Miller, 1999. Storflowm simulation using Geographical Information System with a distributed approach. Journal of American WaterResources Association, in review.

Frakes, B., and Z. Yu, 1999. Comparing the performance of two hydrologic models for climate change scenarios. Journal of American Water Resources Association, in press.

Yu, Z., 1999. Simulating the basin response to single storm events of various resolution described by a mesoscale meteorological model. Journal of Geophysical Research, in press.

Yu, Z., 1999. Assessing the response of subgrid hydrologic processes to atmospheric forcing with a hydrologic model system. Global and Planetary Change, accepted.

Yu, Z., and E.J. Barron, 1999. Preface, Global and Planetary Change, accepted.

Yarnal, B., Z. Yu et al., 1999. A system of linked meteorological and hydrological models in the Susquehanna River Basin. Global and Planetary Change, accepted.

Yu, Z., W.J. Gburek, and F.W. Schwartz, 1999. On evaluating the spatial distribution of water balance in a small watershed, Pennsylvania. Hydrological Processes, in press.

Yu, Z., et al., 1999. Simulation of the hydrologic system response to atmospheric forcing in large river basins: linking a mesoscale meteorological model and a hydrologic model system. Journal of Hydrology, 218, 72-91.

Lakhtakia, M.N., Z. Yu et al., 1999. The river-basin response to varying resolutions of mesoscale meteorological forcing. Climate Research. in press.

Lakhtakia, M.N., others, and Z. Yu, 1998. A simulation of river-basin response to mesoscale meteorological forcing: the Susquehanna River Basin Experiment (SRBEX). Journal of American Water Resources Association, 34, 921-937.

Yu, Z., X. Shangguan, T. Shun, C. Duffy, and F.W. Schwartz, 1998. On evaluating the interaction of surface water and ground water in watersheds. Physical, Chemical, and Biological Aspects of Aquifer-Stream Relations, 45-51.

Yu, Z., and F. W. Schwartz, 1999. Automated calibration applied to constrained ground-water flow modeling. Hydrological Processes, v. 13, 191-209.

Yu, Z., 1997. Grid-spacing effect on watershed hydrologic simulations. Journal of Hydrological Science & Technology, v. 13, no. 1-4, p. 75-85.

Yu, Z., 1997. Application of vector and parallel supercomputers to ground-water modeling. Computer & Geosciences, v. 23, no. 9, 917-927.

Yu, Z., and F. W. Schwartz, 1999. An image processing method for multi-layer porous media in determining concentration fields of tracer plumes in flow-tank experiments. Journal of Hydrogeology, v. 7, no. 1, 236-240.

Yu, Z., and F. W. Schwartz, 1998. Application of integrated Basin-Scale Hydrologic Model to simulate surface water and ground-water interactions in Big Darby Creek Watershed, Ohio. Journal of American Water Resources Association, v. 34, no. 2, 409-425.

Yu, Z., and F. W. Schwartz, 1995. A blueprint for a Basin-Scale Hydrologic Model. Advances in Model Use and Development for Water Resources, American Water Resources Association, 95(3), 109- 117.

Yu, Z., and F. W. Schwartz, 1995. Strategies for optimizing the performance of groundwater codes on the Cray Y-MP and T3D. High Performance Computing, The Society for Computer Simulation, 134-140.

OTHER PUBLICATIONS

Lakhtakia, M.N., Z. Yu, W.M. Lapenta, B. Yarnal, R.A. White, and D.A. Miller, 1999. Some problems associated with regional climate and hydrologic modeling. AMS 14th conference on Hydrology, Dallas.

Yu, Z., E.J. Barron, and F.W. Schwartz, 1998. Distributed modeling of surface water and groundwater flow responding to climate forcing in large watersheds. GSA Annual Meeting, Toronto, Canada.

Yu, Z., E.J. Barron et al., 1998. Simulating the basin response to single-storm events of various resolutions in the Susquehanna River Basin Experiment (SRBEX). The GCIP Mississippi River Climate Conference, St. Louis.

Shangguan, X., Z. Yu, D. Pollard, and E.J. Barron, 1998. Methane emission and production from wetlands as influenced by water table a processbased model. AGU spring meeting, Boston.

Yu, Z., and T.N. Carlson, 1998. The dynamics of soil moisture variation during the storm event. AGU spring meeting, Boston.

Yu, Z., and others, 1998 (invited). A coupled distributed hydrologic modeling system. in press, 1998 American Association for the Advancement of Science (AAAS) Annual Meeting and Science Innovation Exposition.

Barron, E.J., others, and Z. Yu, 1998. Global water cycle: extension across the earth sciences. Report to NASA Earth Observeing System (NAGW-2686; NAG 5-4553), 64 p.

Bindlish, R., Z. Yu, M.N. Lakhtakia, and A. P. Barros, 1997. Scale issues in linking atmospheric and hydrologic models. EOS, 78(46), p. F209.

Yarnal, B., M.N. Lakhtakia, Z. Yu, D.A. Miller, R.A. White, and B.J. Frakes, 1997. A system of linked meteorological and hydrological models in the Susquehanna River Basin. EOS, 78(46), p. F203.

Yu, Z., 1997 (invited lecture). Modeling study of regional hydrologic processes in the Susquehanna River Basin. Department of Meteorology, The Pennsylvania State University.

Yu, Z., 1997 (invited lecture). An integrated study of basin-scale climate and hydrology with linked meteorological and hydrological models. Department of Geological Science, The Ohio State University.

Yu, Z., 1997. Grid size effects on surface water and ground water simulations in watershed. Annual Conference of American Water Resources Association.

Yu, Z., Y. Guo, J. Voortman, R. White, and D. A. Miller, 1997. Terrain Analysis on Geographical Information Systems for Watershed Hydrologic Simulations. GSA Annual Meeting.

Yu, Z., C. Swartz, F. W. Schwartz, and C. Duffy 1997. An image processing procedure to determine spatial distribution of concentration fields in laboratory flow-tank experiments. EOS, 78(17), p. S133-134.

Yu, Z., and F. W. Schwartz, 1996. Automated calibration applied to surface-water and ground-water flow simulations. Midwest Groundwater Conference, p.14.

Yu, Z., and F. W. Schwartz, 1995. Simulation of basin-scale hydrologic processes with high performance computers: application to Big Darby Creek Watershed, Ohio. EOS, 76(46), p. F207.

Yu, Z., and F. W. Schwartz, 1995. The performance optimization of a groundwater code on the Cray Y-MP and T3D. Frontier of Massively Parallel Machines.

Patrick, D., J. How, and Z. Yu, 1992. Engineering investigation of Yazoo Clay (bentonite) in Mississippi. Mississippi Mineral Resources Institute (MMRI-92-2F), 64 p.