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Education

1977-1981 Beijing University, Beijing, PR China.

B.S. degree in Physical Geography

1981-1984 Institute of Geography, Chinese Academy of sciences, Beijing, PR China.

M.S. degree in Physical Geography

1986-1990 School of Geography, University of Manchester, Manchester, England. Ph. D degree in Physical Geography

Position National Center for Computational Hydrosience and Engineering, the University of Mississippi

2006-present Research Professor

1999-2006 Research Associate Professor

1994-1999 Research Assistant Professor

1990-1994 Post-Doctoral Research Associate

1981-1986 Research Associate, Institute of Geography, Chinese Academy of sciences, Beijing, PR China.

Membership: ASCE, IAHR, CAWRA

Journal Publications:

1. **Jia, Y.**, 1990 "Minimum Froude Number and the Equilibrium of Alluvial Sand Rivers", *Earth Surface Processes and Landforms*, vol.15, pp 199-209.
2. **Jia, Y.** and Wang, S.S.Y., 1999, "Numerical model for channel flow and morphological change studies", *Journal of Hydraulic Engineering*, ASCE, Vol. 125, No. 9, pp. 924-933.
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- to channels with complex geometry", *International Journal of Computational Engineering Science*, Vol. 3, No. 1 (March 2002), pages 57-71.
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 13. **Jia, Y.**, Kitamura, T., and Wang, S.S.Y., 2005, "Numerical Simulation of Head-cut with a Two-layered Bed", *International Journal of Sediment Research*, Vol. 20, No. 3, 2005, pp. 185-193.
 14. Wang, S.S.Y. and **Jia, Y.**, 2005 "On the Methodology to Develop Reliable Models for Water System Research", *ACTA Geophysica Polonica*, Vol. 53, No. 4, pp487-499.
 15. Chao, X.B., **Jia, Y.**, Cooper, C.M., Shields, F.D., and Wang, S.S.Y, 2006, "Development and application of a phosphorus model for a shallow oxbow lake", ASCE, *J. of Environmental Engineering*, 132(11), 1498:1507.
 16. Ding, Y., Wang, S.S.Y., and **Jia, Y.**, 2006, "Development and validation of a quasi-three dimensional coastal area morphological model", ASCE, *J. of Waterway, Port, Coastal, and Ocean Engineering*, 132(6), 462-476.
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 20. Chao, X.B., **Jia, Y.**, Shields, F. D. Jr., Wang, S.S.Y. and Charles M. Cooper (2008), "Three dimensional numerical modeling of cohesive sediment transport and wind-wave impact in a shallow oxbow lake", *Advances in Water Resources*, 31(7), 1004–1014.
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2. **Jia, Y.**, and Wang, S.S.Y., 1993 "3D Numerical Simulation of Flow Near a Spur Dike". *Advances in HydroScience and Engineering*, Vol. I Part B, pp 2150-2156. University of Mississippi, June, 1993.
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- Scour Development", Proceedings of and Presented at North American Water and Environment Congress in Anaheim, CA.
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 13. Kitamora, K, **Jia, Y.** Tsujimoto, T. and Wang, Sam. S.Y., 1998, "Sediment transport capacity in channels with vegetation zone". Proceedings of the Advances in Hydro-Science and Engineering, Vol. III.
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29. **Jia, Y.**, Blanckaert, K., and Wang, S.S.Y., 2001, "Simulation of secondary flow in curved channels", *Advances in Fluid Modeling & Turbulence Measurements* (ed. H., Ninokata, A. Wada, and N., Tanaka), Tokyo, Japan, Dec. 4-6, 2001, World Scientific Publishing Co. Pte. Ltd. Suite 1B 1060 Main Street, River Edge, NJ 07661. Pages 55-62
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31. Xu, Y.C., **Jia, Y.**, and Wang, S.S.Y., 2001, "Applications of a depth-integrated two dimensional numerical model to the Lauffen reservoir on the Necker River". XXIX IAHR Congress Proceedings. Theme D: Hydraulics of Rivers, Water and Machinery, Vol. II, pp 134-139.
32. **Jia, Y.**, Kitamura Tadanori, Wang Sam S. Y., 2002, "Numerical experiment on headcut of two-layered channel bed", Proceedings of International Conference of Hydrosience and Engineering Sep. 18-21, 2002 (CDROM).
33. **Jia, Y.**, Wang S.S.Y, "Simulation of Flows around A Submerged Weir in Channel Bendways", The proceedings of International Conference of Hydrosience and Engineering Sep. 18-21, 2002 (CDROM).
34. Xu Yichun, Wang Sam S. Y., **Jia Y.**, 2002, " Numerical Simulation of the three-dimensional Flow Structure around Submerged Dikes", The proceedings of International Conference of Hydrosience and Engineering Sep. 18-21, 2002 (CDROM).

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39. Ding, Y., Wang, S.S.Y., and **Jia, Y.**, 2003, "Numerical studies on simulations of waves and nearshore currents in non-orthogonal mesh system", Proceedings of the International Conference on Estuary and Coasts, Nov. 2003, Hangzhou, China, 719-726.
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- channel bends”, Proceedings of the 5th International Conference of Hydrosiences and Engineering, 2004, Australia.
49. Zhu, T.T., **Jia, Y.**, and Wang, S.S.Y., “Validation of 2-Dimensional Water Quality Model”, Proceedings of the 5th International Conference of Hydrosiences and Engineering, 2004, Australia.
 50. Zhang, Y.X., **Jia, Y.**, and Wang, S.S.Y., “A Multi-block Algorithm for Two-dimensional Hydrodynamic Model”, Proceedings of the 5th International Conference of Hydrosiences and Engineering, 2004, Australia.
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 53. Wang, S.S.Y. and **Jia, Y.**, 2005, “A Systematic Procedure for Flow Model Verification and Validation”, Proceedings of the World Water & Environmental Resources Congress 2005, ASCE, Anchorage, Alaska, May 15-20 (CD-ROM).
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 64. **Jia, Y.** and Wang, S. S.Y., “3D Free Surface Flow Models’ Verification and Validation: A Test Example”. *Sino-American Workshop on Advanced Computational Modeling in Hydroscience and Engineering, Beijing, Nov. 2006.* (CD-ROM).
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 66. **Jia, Y.**, and Zhu, T.T., 2007, “Study of chemical transport and fate processes in natural waters using a numerical model”, 32nd IAHR Congress, 2007, July, 1-6, 2007, Venice, Italy.
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 81. Hossain, A., **Jia, Y.** and Chao, X., 2009, Estimation of Manning's roughness coefficient distribution for hydrodynamic model using remotely sensed land cover features, 17th International Conference on Geoinformatics, August 12-14, 2009, Fairfax, VA, USA, PP, 1-4, DOI:10.1109/ GEOINFORMATICS.2009.5293484
 82. Chao, X.B., Zhu, T.T., Hammouri, M., and **Jia, Y.** (2009), Numerical Simulation of Chemical Spills Using CCHE2D Model and Chemical Property Database, ASCE World Water & Environmental Resources Congress, May 17-21, Kansas City, Missouri (CD-ROM).
 83. Zhang, Y.X., **Yafei Jia**, Keh-Chia Yeh, Chung-Ta Liao and Sam S.Y. Wang "Numerical Simulation of Sediment Transport and Morphological Change of JiJi Weir Reservoir", World Environmental and Water Resources Congress 2009: Great Rivers © 2009 ASCE, on CD-ROM 3517-3528
 84. **Jia Y.**, Yaoxin Zhang, and Sam, S.Y. Wang, "Computational Study of Softrock Erosion in a Mountain River." Thirteenth Cross-Strait Hydroscience Conference, Taizhong City, Taiwan, Nov. 2009
 85. **Jia, Y.**, Yaoxin Zhang, and Sam, S.Y. Wang, "Simulating River Channel Change And Bank Erosion Process Using A Depth Averaged Model." Thirteenth Cross-Strait Hydroscience Conference, Taizhong City, Taiwan, Nov. 2009.
 86. Wang, S.S.Y., **Jia, Y.**, and Ding, Y., "Recent Advances in Environmental and Coastal Research Methodology-- An Overview", Invited Keynote Lecture Presented at IV

International Conference on Environmental Hydrology and First Symposium on Coastal and Port Engineering. Cairo, Egypt, 9/26 – 9/30/2009.

87. Zhang, Y.X., **Yafei Jia**, and Sam S.Y. Wang. “Sediment Transport Simulation of JiJi Weir Upstream of Taiwan”, EWRI World Environment & Water Resources Congress 2009, Kansas City,, USA, May 17-21, 2009.
88. Zhu, T., **Jia, Y.**, and Wang, S.S.Y. (2009). "Numerical Modeling of Ozonation of Organic Chemicals in Surface Water", ASCE EWRI 2009 Congress, May 17-21, 2009, Kansas City, MO.

Invited Papers

- Wang, S.S.Y. and **Jia, Y.**, 1995, "Computational Modeling and Hydroscience Research," invited Plenary Lecture, The Second International Conference on Hydroscience and Engineering, Beijing, China, Mar. 1995; also published in the Advances in Hydroscience and Engineering, edited by Chinese Hydraulic Engineering Society and International Research and Training Center of Erosion and Sedimentation, Tsing Hua University Press, pp. 2147-2157, March, 1995.
- Wang, S.S.Y., Wu, W., and **Jia, Y.**, 2003 “Modeling River Sedimentation And Morphodynamic Processes With Applications To Mississippi And Other Rivers” UNESCO/ICCORES Workshop: From watershed slopes to coastal areas: sedimentation processes at different scales, Venice 3-5 December 2003
- Invited lecture on the state of the art flood simulation modeling technology and its applications at an international workshop for flood research (March10-11, 2008, Puerto Rico). Research collaborations between NCCHE and professionals from several countries including a flood studying group funded by NSF was been established
- Invited lecture on Computational Modeling of Flooding, Embankment Breaching, Morphologic Response and Emergency Management at an international workshop for flood research (Jan.26-29, 20010, Cairo Egypt).

Advanced Short Courses and Workshop.

- “Numerical models for simulating turbulent flows and sedimentation process in rivers”, 1993, 1st Advances in Hydroscience and Engineering International Conference.
- “CCHE2D computational model” training course, at the International Conference for Hydroscience and Engineering 2000, Seoul Korea.

- Short Course Taught on “Sediment Transport and Morphodynamic Processes Modeling”, EWRI World Environment & Water Resources Congress 2008, Honolulu, USA, May, 2008
- Workshop for technology transfer to the Department of Civil Engineering, National Chiao Tung University, and the Water Resources Agency, Ministry of Economic in Taiwan on “Sediment Transport and Morphodynamic Processes Modeling Using CCHE2D Modeling System”, in November 5-6, 2008, Taiwan.
- *International Workshop on Dam/Levee Breaching and Geomorphic Response*, Jan. 27-29, 2010, Cairo, Egypt. An invited lecture: “Computational modeling of flooding, embankment breaching, morphologic response and emergency management” was presented to a large group of research scientists, engineers, professors and graduate students from multiple countries including USA, Belgian, Spain, Pakistan, Puerto Rico and Egypt. Flooding associate disasters, impacts the environment sediment transport and breaching processes were discussed in the Workshop.
- Workshop of technology transfer to the Department of Civil Engineering, National Chiao Tung University, and the Water Resources Agency, Ministry of Economic in Taiwan in November 17-19 2009. Computational modeling capabilities and Graphic User Interface developed for predicting flood flows, sediment transport and bank erosion, etc. were introduced to hydraulic engineers, research scientists, and water resources managers in the workshop.

Research Report to Waterway Experimentation Station, US Army Corps of Engineers

Jia Y., and Wang, S.S.Y. 2000, “Numerical simulations of the channel flow with submerged weirs in Victoria Bendway, Mississippi River”, Technical Report No. NCCHE-TR-2000-3, September 30,2000

Jia Y., Wang, S.S.Y., Xu, Y., and Huang, S.L., 2001, “Research on Design Guide for Submerged Weirs Using Numerical Simulation and Physical Model Data”, Technical Report No. NCCHE-TR-2001-6, September 30,2001

Jia Y., Wang, S.S.Y., Xu, Y., and Huang, S.L., 2002, “Research on Optimal Parameters of Submerged Weirs Using Numerical Simulation and Physical Model Data”, Technical Report No. NCCHE-TR-2002-2.

Jia, Y., and Wang, S.S.Y., 2004, “ Development of Enhanced Algorithms and Methods for Sediment Transport and Riverine Morphology Change with Hydraulic Structures”, Report to the US Army Research Office.

Scott, S.H., **Jia, Y.**, Wang, S.S.Y., 2001, “Analysis of Near Field Hydrodynamics of Submerged Weirs”, Technical Note, Coastal and Hydraulic Engineering, ERDC, US Army Corps of Engineers, July.

GRANTS

1. Grants approved

1. Mathematical Modeling of Erosion and Sediment Transport Processes in Support of the DEC project (Phase I)
Dr. Y. Jia, **Investigator** (Dr. Sam Wang, PI)
Duration: 3 years
Amount: 2,655,200
2. Numerical Modeling of Soil Erosion and Transport Processes to support the DEC Project (USDA Agriculture Research Service, NSL, Specific cooperative agreement, Phase II)
Dr. Y. Jia, **Senior Investigator** (Dr. Sam Wang, PI)
Duration: 5 years (1992-1997)
Amount: 4,284,910
3. Verification of Soil Erosion and Sediment Transport in Support of the DEC Project (USDA Agriculture Research Service, NSL, Specific cooperative agreement, Phase III)
Dr. Y. Jia, **Research Leader** in Free Surface 2D/3D Flow Model Development (Dr. Sam, Wang, PI)
Duration 5 years (1997-2002)
Amount \$4,258,679
4. Validation and Application of Erosion and Sediment Transport Models and Development of Water Quality Models in Support of DEC (USDA Agriculture Research Service, NSL, Specific cooperative agreement, Ph IV)
Dr. Y. Jia, **Research Leader** in Model Development, Verification, Refinement and Applications (Dr. Sam, Wang, PI)
Duration: 5 years (2002-2007)
Amount: \$4,142,945 (estimated)
5. Three Dimensional Simulation Of Flows, Sediment Transport And Bank Erosion In A Curved Channel Reach (Research)

- Dr. Yafei Jia: **PI**
Granting agency: National Sedimentation Lab., US Department of Agriculture
Duration: 12 months (March, 2005-March, 2006)
Amount : \$20,000.
6. Development And Refinement Of Multi-Dimensional Numerical Tools For Simulating Dam Break And Riverine (Research)
Dr. Yafei Jia: COPI (PI: Sam S.Y. Wang), (The Riverine part of the project)
Granting agency: US Army Research Office
Duration: 6 months (Jan, 1, 2004-Jun. 1, 2004)
Amount : \$10,000.
7. Numerical Simulations Of The Channel Flow With Submerged Weirs In Victoria Bendway, Mississippi River. Contract No. DACW42-00-P-0456
Dr. Yafei Jia: COPI, (PI: Sam S.Y. Wang)
Granting agency: US Army Corps of Engineers, Waterway Experimental Station.
Duration: 12 months
Amount: \$40,000
8. Research on optimal Parameters of Submerged Weirs Using Numerical Simulation and Physical Model Data. Contract No. DACW42-01-P-0243
Dr. Y. Jia: Co-PI (PI: Sam S.Y. Wang)
Granting agency: US Army Corps of Engineers, Waterway Experimental Station.
Duration: 12 months
Amount: \$70,000
9. Research on Optimal Parameters of Submerged Weirs Using Numerical Simulation and Physical Model Data. Contract No. DACW42-02-P-0211
Dr, Y. Jia: Co-PI (PI: Sam S.Y. Wang)
Granting agency: US Army Corps of Engineers, Waterway Experimental Station.
Duration: 12 months
Amount: \$20,000
10. Basic Research in Support of the Arkansas River Navigation Study (ARNS) and the Arkansas / White River Studies
Dr. Yafei Jia: PI,
Granting agency: US Army Research Office
Duration: 6 months (September. 2005-February, 2006)
Amount : \$120,000.