Curriculum Vitae

Personal Details:

Name: Mehdi
Last Name: Mazaheri
Father's Name: Ezzatollah
Nationality: Iranian
Date of Birth: May 10, 1981
Birthplace: Iran, Markazi Province, Arak
Marital Status: Married
Academic Rank: Associate Professor

Contact Information:

Office Address: Department of Water Engineering and Management, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran

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Educations:

Degree	Discipline	Location/University	Years
Ph.D.	Water Structures	Iran, Tehran, Tarbiat Modares University	2006-2011
M.Sc.	Water Structures	Iran, Tehran, Tarbiat Modares University	2003-2006
B.Sc.	Water Science and Engineering	Iran, Ahvaz, Shahid Chamran University	1999-2003

Research Interests:

Main Research Interests	1- Pollution source identification (Inverse solution of the pollution transport equations) 2- Inverse problem 3- Analytical solutions of governing equations of pollution transport and flow equations 4- Numerical modeling of pollution transport equations
Secondary Research Interests	- Numerical modeling of hydrodynamics of surface waters - CFD - Software development

Honors:

- Top student in B.Sc. educational program
- Member of Exceptional Talents society in B.Sc. and M.Sc. educational programs
- Ranked 2nd in the national university entrance exam for M.Sc. degree in 2003
- Selected student of Department of Water Structures in M.Sc. educational program in 2004
- Ranked 1st in the Ph.D. entrance exam of Tarbiat Modares University in 2006

- Top researcher of the Islamic Parliament Research Center in 2021
- Ham Radio Licence from Communication Regulatory Authority in 2021 (EP2IMM)
- Author of the selected report of Islamic Parliament Research Center in 2023
- Selected
- Selected researcher for producing the highest number of Q1-articles in the Web of Science (WOS) journal list in 2023-2024
- Selected professor of Tarbiat Modares University in 2024

Courses Taught:

M.Sc. Program	Ph.D. Program
• Engineering Mathematics • Principles of Pollutant Transport Modeling • Open Channel Hydraulics • Numerical Analysis • Computer Programming • Computational Methods in Water Engineering	• Pollutants Hydrodynamics in Environment • Advanced Engineering Mathematics • Computational Hydraulics • CFD

Specialized Software Taught
• Fortran (2003 Standards) • MATLAB • MIKE 11 • MIKE 21 • HEC-RAS • MAPLE

Research Experiences:

Theses

B.Sc. Project: Developing a Computer Program for Land Leveling Computations in Visual Basic

M.Sc. Seminar: Derivation of an Analytical Model for Velocity Distribution in Transition Zone for Channel Flows over Inflexible Submerged Vegetation

M.Sc. Thesis: Application of Artificial Neural Networks in Flood Hydrograph Routing through Rockfill Dams and Watershed Outlet Hydrograph Determination

Ph.D. Seminar: Mathematical Investigation of Pollutant Fate and Transport in the Environment

Ph.D. Thesis: Mathematical Model for Identification of Pollution Sources in the Rivers (Reconstruction of Location and Release History of the Sources)

Journal Papers in English

1- Samani, J. M. V. and Mazaheri, M., (2009). Combined flow over weir and under gate. Journal of Hydraulic Engineering, vol. 135, no. 3, pp. 224-227.

2- Samani, J. M. V. and Mazaheri, M., (2009). An analytical model for velocity distribution in transition zone for channel flows over inflexible submerged vegetation. Journal of Agricultural Science and Technology, vol. 11, no. supplementary, pp. 573-584.

3- Mazaheri, M., Samani, J. M. V., and Samani, H. M. V., (2013). Analytical solution to one-dimensional advection-diffusion equation with several point sources through arbitrary time-dependent emission rate patterns. Journal of Agricultural Science and Technology, vol. 15, no. 6, pp. 1231-1245.

4- Mazaheri, M., Mohammad Vali Samani, J. and Mohammad Vali Samani, H., (2015). Mathematical model for pollution source identification in rivers. Environmental Forensics, vol. 16, no. 4, pp. 310-321.

5- Barati Moghaddam, M., Mazaheri, M. and Mohammad Vali Samani, J., (2015). A comprehensive one-dimensional numerical model for solute transport in rivers. Hydrology and Earth System Sciences, vol. 21, no. 1, pp. 99-116.

6- Ghane, A., Mazaheri, M. and Mohammad Vali Samani, J., (2016). Location and release time identification of pollution point source in river networks based on the Backward Probability Method. Journal of Environmental Management, vol. 180, no. 15, pp. 164-171.

7- Sarkhosh, P., Mohammad Vali Samani, J. and Mazaheri, M., (2016). A one-dimensional flood routing model for rockfill dams considering exit height. Water Management, vol. 171, no. 1, pp. 1-10.

8- Hamidi Razi, H., Mazaheri, M. Carvajalino-Fernandez, M. and Mohammad Vali Samani, J., (2018). Investigating the restoration of Lake Urmia using a numerical modeling approach. Journal of Great Lakes Research, vol. 45, no. 1, pp. 87-97.

9- Fakouri, B., Mazaheri, M. and Mohammad Vali Samani, J., (2019). Management scenarios methodology for salinity control in rivers (case study: Karoon River, Iran). Journal of Water Supply: Research and Technology (AQUA), vol. 68, no. 1, pp. 74-86.

10- Amiri, S., Mazaheri, M. and Mohammad Vali Samani, J., (2019). Introducing a general

framework for pollution source identification in surface water resources (theory and application). Journal of Environmental Management, vol. 248, no. 10, pp. 1-12.

11- Jamshidi, A., Mohammad Vali Samani, J., Mohammad Vali Samani, H., Zanini, A., Tanda, M. G. and Mazaheri, M., (2020). Solving inverse problems of unknown contaminant source in groundwater-river integrated systems using a surrogate transport model based optimization. Water, vol. 12, no. 9, pp. 1-26.

12- Amiri, S., Mazaheri, M. and Bavandpouri Gilan, N., (2021). Introducing a new method for calculating the spatial and temporal distribution of pollutants in rivers. International Journal of Environmental Science and Technology, vol. 18, no. 1, pp. 3777-3794.

13- Karimi, M., Mohammad Vali Samani, J. and Mazaheri, M., (2021). Shoreline spatial and temporal response to natural and human effects in Boujagh National Park, Iran. International Journal of Sediment Research, vol. 36, no. 5, pp. 582-592.

14- Karami Cheme, E. and Mazaheri, M., (2021). The effect of neglecting spatial variations of the parameters in pollutant transport modeling in rivers. Environmental Fluid Mechanics, vol. 21, no. 3, pp. 587-603.

15- Barati Moghaddam, M., Mazaheri, M. and Mohammad Vali Samani, J., (2021). Inverse modeling of contaminant transport for pollution source identifcation in surface and groundwaters: A review. Groundwater for Sustainable Development, vol. 15, no. 1, pp. 1-15.

16- Faraji, M. and Mazaheri, M. (2022). Mathematical model of solute transport in rivers with storage zones using nonlinear dispersion flux approach. Hydrological Sciences Journal, vol. 67, no. 11, pp. 1656-1668.

17- Barati Moghaddam, M., Mazaheri, M., Mohammad Vali Samani, J. and Boano, F. (2022). An innovative framework for real-time monitoring of pollutant point sources in river networks. Stochastic Environmental Research and Risk Assessment, vol. 36, pp. 1791-1818.

18- Badrzadeh, N., Samani, J. M. V., Mazaheri, M., and Kuriqi, A. (2022). Evaluation of management practices on agricultural nonpoint source pollution discharges into the rivers under climate change effects. Science of the Total Environment, vol. 838, part 4, 156643.

19- Permanoon, E., Mazaheri, M. and Amiri, S. (2022). An analytical solution for the advection-dispersion equation inversely in time for pollution source identification. Physics and Chemistry of the Earth, vol. 128, Parts A/B/C, 103255.

20- Fakouri, B., Mohamad Vali Samani, J., Mohamad Vali Samani, H. and Mazaheri, M. (2022). Cost-based model for optimal waste-load allocation and pollution loading losses in river system: simulation–optimization approach. International Journal of Environmental Science and Technology, vol. 19, no. 12, pp. 12103-12118.

21- Montazeri, A. H., Mazaheri, M., Morid, S. and Mosaddeghi, M. R. (2023). Effects of upstream activities of Tigris-Euphrates river basin on water and soil resources of Shatt Al-Arab border river. Science of the Total Environment, vol. 858, part 1, 159751.

22- Kalami, S., Amiri, S. and Mazaheri, M. (2023). Estimation of segment-averaged geometric-

hydraulic relationships as a function of depth in natural rivers using inverse modeling. Annals of the American Association of Geographers, vol. 113, no. 4, pp. 949-972.

23- Shilsar, M. J. F., Mazaheri, M., and Samani, J. M. V. (2023). A semi-analytical solution for one-dimensional pollutant transport equation in different types of river networks. Journal of Hydrology, vol. 619, 129287.

24- Torabi Haghighi, A., Mazaheri, M., Amiri, S., Ghadimi, S., Noori, R., Oussalah, M., Gohari, A., Noury, M., Hekmatzadeh, A. and Klöve, B. (2024). Water or mirage? Nightmare over dams and hydropower across Iran. International Journal of Water Resources Development, vol. 40, no. 2, pp. 234-251.

25- Torabi Haghighi, A., Sharifi, A., Darabi, H., Mazaheri, M., Mohammadpour, R., Gohari, A., Noury, M., Hekmatzadeh, A., Panchanathan, A., Hashemi, H., Xenarios, S. and Klöve, B. (2024). When rain does not run, a fingerprint of uncoordinated water resources development. Journal of Hydrology, vol. 629, 130626.

26- Khodambashi Emami, S. and Mazaheri, M. (2024). A comprehensive assessment and comparison of the impacts of storage parameters on solute transport in streams using a novel framework. Journal of Hydrology, vol. 633, 130873.

27- Saadat, A. M. and Mazaheri, M. (2024). Forward and inverse river contaminant transport modeling using group preserving scheme. Physics of Fluids, vol. 36, no. 9, pp. 1-16.

28- Saadat, A.M., Emami, S.K. and Mazaheri, M. (2025). Evaluating the impact of storage zones on backward contaminant transport: A comparative study of the classic advection-dispersion equation and storage zone models in riverine systems. Science of the Total Environment, vol. 973, 179176.

29- Dahmardan, A., Amiri, S. and Mazaheri, M. (2025). Theoretical basis for designing a mathematical sensor for pollution source identification in rivers. Water, Air, & Soil Pollution, vol. 236, no. 689, pp. 1-14.

30- Ghadimi, S., Sharifi, A., Ahrari, A., Mazaheri, M., Noury, M., Klöve, B. and Torabi Haghighi, A. (2025). From upstream development to downstream water shortage: tracing hydrological changes in the Karkheh River Basin. Sustainable Water Resources Management, vol. 11, no. 87, pp. 1-16.

31- Farhadi, S. and Mazaheri, M. (2025). Introducing the novel method of equation-oriented modeling for pollutant transport in different types of river networks. Journal of Hydrology, vol. 655, 132913.

Journal Papers in Persian

32- M. Mazaheri, J.M.V. Samani, (2008). An analytical model for transition zone of velocity distribution in submerged inflexible vegetative channels, International Journal of Industrial Engineering & Production Management, 19(2), 113.

33- Mohmmad Vali Samani, J., Mazaheri, M., Kadivar, M. (2011). Mathematical Semi-analytical Model of Combined Flow over Weir and under Gate by Different Geometries. Journal of Hydraulics, 6(2), 57-67. doi: 10.30482/jhyd.2011.85496.

34- Mashhadgarme, N., Mohammadvali Samani, J., Mazaheri, M. (2013). Analytical Solution of Pollution Transport Equation with Arbitrary Time Pattern of Multiple Point Sources using Green's Function Method. Journal of Hydraulics, 8(4), 13-25. doi: 10.30482/jhyd.2014.6697.

35- Mirzaei, G., Samani, J., Mazaheri, M. (2015). Flood control and management by capable simulator of unsteady flow in river. Water and Irrigation Management, 5(1), 81-96. doi: 10.22059/jwim.2015.55219.

36- Barati Moghaddam, M., Mazaheri, M., Mohammadvali Samani, J. (2015). One-dimensional pollutant transport model in natural rivers, with emphasis on the role of storage zones. Water and Irrigation Management, 5(2), 169-190. doi: 10.22059/jwim.2015.57442.

37- Ghane, A., Mazaheri, M., Mohammadvali Samani, J. (2016). Application of Backward Probability Method in Pollutant Source Tracking in Non-Uniform Flow Rivers. Journal of Environmental Studies, 42(2), 397-410. doi: 10.22059/jes.2016.58742.

38- Fakouri Dekahi, B., Mohammadvali Samani, J., Mazaheri, M. (2016). Effect of floods and management of pollution sources on temporal and spatial variations in water salinity of Karun River (Mollasani to Farsiat). Water and Irrigation Management, 6(2), 295-314. doi: 10.22059/jwim.2017.63785.

39- Barati Moghadam, M., Mazaheri, M., Mohammad Vali Samani, J. (2017). Numerical Solution to Advection-Dispersion Equation with Transient Storage Zones, Considering Unsteady Flow in Irregular Cross Section Rivers. Irrigation Sciences and Engineering, 40(1), 99-117. doi: 10.22055/jise.2017.12670.

40- Mashhadgarme, N., Mazaheri, M., Mohammad Vali Samani, J. (2017). Analytical Solution of 1D and 2D Pollution Transport Equations for Several Point Source with Arbitrary Patterns Using the Green's Function Method. Sharif Journal of Civil Engineering, 33.2(2.1), 77-91. doi: 10.24200/j30.2017.4543.

41- Ghane, A., Mazaheri, M., Mohammad Vali Samani, J. (2017). Location and Release Time Tr acing of Pollution Source in Rivers Based on Compound Model Adjoint Analysis and Opti mization Method. Sharif Journal of Civil Engineering, 33.2(3.2), 95-104. doi: 10.24200/j30.2017.20111.

42- Hatamjafari, M., Mazaheri, M., Mohammad Vali Samani, J. (2017). Numerical Solution for Non-Uniform Fractional Advection Dispersion Equation. Journal of Water and Soil, 31(3), 689-700. https://doi.org/10.22067/jsw.v31i3.53624.

43- Bavandpouri Gilan, N., Mazaheri, M., Fotouhi Firouzabadi, M. (2017). Analytical Solution of Contaminant Transport Equation in River by Arbitrary variable coefficients using Generalized Integral Transform Technique. Journal of Advanced Mathematical Modeling, 7(1), 89-116. doi: 10.22055/jamm.2017.13105.

44- Naderkhanloo, V., Mazaheri, M., Mohammad Vali Samani, J. (2017). Investigating and Modeling of Gotvand-Olya Dam Challenge and Management Solutions. Journal of Environmental Studies, 43(2), 251-265. doi: 10.22059/jes.2017.63077.

45- Fakouri Dekahi, B., Mazaheri, M., Mohammad Vali Samani, J. (2018). Evaluation of Karun River Water Salinity Reduction Strategies Using Management Scenarios. Amirkabir Journal of Civil Engineering, 50(2), 245-256. doi: 10.22060/ceej.2017.12160.5138.

46- Karimi M, Vali Samani J M, Mazaheri M. Evaluating the Hydrodynamic and Morphology of Sefidroud River Delta Using 2D Simulation and Remote Sensing Data. joc. 2018; 9 (33):1-12, URL: http://joc.inio.ac.ir/article-1-1266-en.html.

47- Dahmardan, A., Mazaheri, M., Mohammad Vali Samani, J. (2018). Identification of Location, Activity Time and Intensity of the Unknown Pollutant Source in River. Environmental Management Hazards, 5(1), 35-52. doi: 10.22059/jhsci.2018.248316.310.

48- Loushabi, M., Mazaheri, M., Mohammd Vali Samani, J. (2019). Inverse Solution of the Adve ction-Dispersion Equation in Rivers for Pollution Source Identification. Sharif Journal of Mechanical Engineering, 35.3(1), 103-113. doi: 10.24200/j40.2018.50053.1455.

49- Karami cheme, E., Mazaheri, M. (2019). Determine of The Importance of Longitude Dispersion Coefficient on Solute Transport in Rivers Using the Monte Carlo Simulation. Iranian Journal of Soil and Water Research, 50(4), 763-776. doi: 10.22059/ijswr.2018.259654.667934.

50- Hamidi Razi, H., Mazaheri, M., Mohammadvali Samani, J., Carvajalino Fernandez, M. (2019). Investigating the Effectiveness of Urmia Lake Different Restoration Scenarios Using a 2D Hydrodynamic Model. Journal of Civil and Environmental Engineering, 49.2(95), 71-81.

51- Mashhadgarme, N., Mazaheri, M., Mohammadvali Samani, J. (2019). An analytical Solution to Bi-dimensional Unsteady Contaminant Transport Equation with Arbitrary Initial and Boundary Conditions. Hydrophysics, 5(1), 111-123.

52- Kalami, S., Mazaheri, M., Mohamad Vali Samani, J. (2019). Derivation of River's Cross-Section Hydraulic Relationships Using Inverse Modeling. Irrigation Sciences and Engineering, 42(1), 1-14. doi: 10.22055/jise.2017.20269.1471.

53- Jafari, N., Mazaheri, M., Mohammadvali Samani, J. (2019). Analytical evaluation of temporal and spatial sensitivity of longitudinal dispersion coefficient in rivers for unsteady and nonuniform flows. Water and Irrigation Management, 9(1), 155-169. doi: 10.22059/jwim.2019.291147.722.

54- Kalami, S., Mazaheri, M., Mohammad Vali Samani, J. (2020). Identification of river geometr ic-hydraulic relationships using inverse solution of the saint-venant equations and applicati on of it. Sharif Journal of Civil Engineering, 35.2(4.2), 33-42. doi: 10.24200/j30.2018.5455.2244.

55- Badrzadeh, N., Mohammad Vali Samani, J., Mazaheri, M. (2020). Assessment of management practices on agricultural non-point source pollution (Aslandooz to Parsabad spatial range,

1993 to 2007). Journal of Environmental Studies, 45(4), 755-771. doi: 10.22059/jes.2020.289457.1007927.

56- Amiri, S., Mazaheri, M., Mohammad Vali Samani, J. (2018). Recovering the Temporal Release Rate of Pollutant Sources in River in Two-dimensional and real conditions. Amirkabir Journal of Civil Engineering, 51(6), 13-13. doi: 10.22060/ceej.2018.14503.5675.

57- Dahmardan, A., Mazaheri, M., Mohammadvali Samani, J. (2020). Simultaneous identification of location and intensity of several active pollutant sources in river using mathematical modeling. Journal of Modeling in Engineering, 18(60), 257-272. doi: 10.22075/jme.2019.17537.1706.

58- Asadi, M., Mazaheri, M., Mohamad Vali samani, J. (2020). Assessment of Time Integration Methods in the Numerical Solution of Two-Dimensional Shallow Water Equations. Irrigation Sciences and Engineering, 43(2), 215-230. doi: 10.22055/jise.2019.25785.1765.

59- Loushabi, M., Mazaheri, M., Mohammadvali Samani, J. (2020). Application of the Quasi-Reversibility Method in Inverse Computation of Temporal and Spatial Pollutant Concentration in Time. Iranian Journal of Soil and Water Research, 51(3), 713-726. doi: 10.22059/ijswr.2019.289571.668328.

60- Mashhadgarme, N., Mazaheri, M., Mohammd Vali Samani, J. (2020). An analytical solution t o two-dimensional unsteady mass transfer equation with arbitrary source term in the river. Sharif Journal of Mechanical Engineering, 36.3(1), 109-119. doi: 10.24200/j40.2019.54224.1527.

61- Barati Moghaddam, M., Mazaheri, M., Mohammad Vali Samani, J. (2020). Inverse solution of transport equation for pollution source identification in rivers under realistic conditions using the geostatistical method. Water and Irrigation Management, 10(3), 411-427. doi: 10.22059/jwim.2021.311788.832.

62- Permanoon, E., Mazaheri, M. (2021). Identification of the source of pollution with an Inverse-time analytical solution to the pollution transport equation. Hydrophysics, 6(2), 25-39. dor: 20.1001.1.24767131.1399.6.2.4.0.

63- Amiri, S., Mazaheri, M., Mohammadvali Samani, J. (2021). Identification of Multiple Pollutant Sources in Rivers in One-Dimensional Domain under Real Conditions. Journal of Civil and Environmental Engineering, 51.1(102), 15-26. doi: 10.22034/jcee.2020.26099.1632.

64- Faraji, M., Mazaheri, M., M. V. Samani, J. (2021). Presentation a New Method in Mathematical Modeling of pollutant Transport in Rivers with Storage Zones. Amirkabir Journal of Civil Engineering, 53(9), 3933-3946. doi: 10.22060/ceej.2020.18146.6787.

65- Mashhadgarme, N., Mazaheri, M., Mohammad Vali Samani, J. (2021). An Analytical solution to two-dimensional unsteady pollutant transport equation with arbitrary initial condition and source term in the open channels. Journal of the Earth and Space Physics, 47(1), 77-90. doi: 10.22059/jesphys.2021.287486.1007153.

66- Jamshidi, A., Mohammad Vali Samani, J., Mohammad Vali Samani, H., Mazaheri, M. (2021). The Comparison of Inverse Approaches Simulation-Optimization and Surrogate Transport Model for Pollution Source Characteristics Identification in Aquifer-River Integrated Systems. Water and Irrigation Management, 11(2), 325-343. doi: 10.22059/jwim.2021.324853.877.

67- Khodamoradi Vatan, N., Mazaheri, M., Mohammadvali Samani, J. (2021). Evaluation of the performance of river water quality monitoring stations of Iran, Water and Irrigation Management, 11(3), pp. 541-559. doi: 10.22059/jwim.2021.327850.906.

68- Fardadi Shilsar, M. J., Mazaheri, M., Mohammad Vali Samani, J. (2022). Analytical solution of the pollution transport equation with variable coefficients in river using the Laplace Transform. Water and Irrigation Management, 11(4), 683-698. doi: 10.22059/jwim.2021.329149.911.

69- Shahverdi, K., Mazaheri, M., Naseri, M., Monem, M. J. (2022). Two-dimensional unsteady modeling of the Bamdej wetland hydrodynamic and quality. Journal of Iranian Water Engineering Research, 1(1), 1-13. doi: 10.22034/ijwer.2022.307191.1006.

70- Fakouri, B., Mohammad Vali Samani, J., Mohammad Vali Samani, H., Mazaheri, M. (2021). Optimal Waste Load Model in Karoon River with the Pollution Loading Loss Analysis. Iran-Water Resources Research, 17(3), 330-344.

71- Gholami, Z., Yasi, M., NaziGhameshlou, A., Mazaheri, M. (2021). Numerical Solution of Advection-Dispersion Equation using Mesh-free Petrov-Galerkin Method (Case Study: Murray Burn River). Journal of Water and Wastewater Science and Engineering, 6(3), 47-57. doi: 10.22112/jwwse.2021.271723.1254.

72- Montazeri, A. H., Mazaheri, M., Morid, S. (2022). Mathematical Model of Salinity Intrusion in the Arvand Tidal River and Its Effect on Salinity of Lands around the River. Journal of Environmental Studies, 48(2), 221-248. doi: 10.22059/jes.2022.334989.1008258.

73- Heidari, S., Fakouri, B., Mazaheri, M., Mohammad Vali Samani, J. (2022). Scale Effects in Hydraulic Modeling with a Two-Dimensional Numerical Model. Water and Irrigation Management, 12(2), 375-387. doi: 10.22059/jwim.2022.341971.983.

74- Fardadi Shilsar, M., Mazaheri, M., Mohammad Vali Samani, J. (2022). Analytical solution of mass transport equation in river network. Sharif Journal of Mechanical Engineering, 38.3(1), 35-49. doi: 10.24200/j40.2021.58767.1613.

75- Noghreyan, A., Mohamadvali Samani, J., Mazaheri, M. (2022). Comparison of the SINTACS Aquifer Vulnerability Model to Nitrate with Three-Dimensional Numerical Model (Case Study of Varamin Plain Aquifer). Iranian Journal of Soil and Water Research, 53(1), 15-31. doi: 10.22059/ijswr.2022.323930.668975.

76- Fardadi Shilsar, M. J., Mazaheri, M., Mohammad Vali Samani, J. (2022). Analytical solution of pollutant transport equation in different types of river networks considering distributed source term. Iranian Journal of Soil and Water Research, 53(5), 1057-1077. doi: 10.22059/ijswr.2022.341884.669250.

77- Gholami, Z., Yasi, M., NaziGhameshlou, A., Mazaheri, M. (2022). Two-Dimensional Modeling of Fractional Advection-Dispersion Equation using Meshfree Local Petrov-Galerkin Numerical Method (Case Study: Athabasca River). Journal of Hydraulics, 17(4), 65-83. doi: 10.30482/jhyd.2022.349707.1611.

78- Khodambashi Emami, S., Mazaheri, M. (2023). Sensitivity Analysis of Transient Storage Parameters in Mathematical Modeling of Pollution Transport in Rivers Containing Storage Zone. Irrigation Sciences and Engineering, 45(4), 101-116. doi: 10.22055/jise.2022.39365.2009.

79- Saadat, A. M., Mazaheri, M., MV Samani, J. (2023). Backward Solution (in-time) of the Pollution Transport Equation in River Using Group Preserving Scheme. Ferdowsi Civil Engineering, 35(4), 35-52. doi: 10.22067/jfcei.2022.77645.1165.

80- Montazeri, A., Khodambashi Emami, S., Mazaheri, M. (2023). Investigate the Effect of Stagnant Zone Behavior in One-Dimensional Hydrodynamic Models and Solute Transport in Rivers. Water and Soil, 36(6), 661-675. doi: 10.22067/jsw.2022.77613.1181.

81- Yousofvand, F., Mohammad Vali Samani, J., Mohammad Vali Samani, H., Mazaheri, M. (2023). Recovering the Salinity Distributed Sources into River from Aquifer Using the Simulation-Optimization Method. Water and Irrigation Management, 13(2), 471-486. doi: 10.22059/jwim.2023.355061.1051.

82- Khodamoradi Vatan, N., Mazaheri, M., Mohammad vali samani, J., Razavi Toosi, S. L. (2023). Comparative evaluation and comparison of quality monitoring network of Iran's rivers with selected countries. Iranian Journal of Soil and Water Research, 54(5), 737-751. doi: 10.22059/ijswr.2023.356969.669474.

83- Farhadi, S., & Mazaheri, M. (2023). Application of Equation-Oriented Modeling in solving Diffusion Equation in Different Types of Networks. Journal of the Earth and Space Physics, 49(3), 649-667. doi: 10.22059/jesphys.2023.348098.1007455

84- Saadat, A. M., & Mazaheri, M. (2024). Using one-step group preserving schemes for contaminant transport modeling in rivers. Iranian Journal of Soil and Water Research, 54(11), 1627-1646. doi: 10.22059/ijswr.2023.365226.669572

85- Valizadeh, R., Mazaheri, M., Mohammad Vali Samani, J. (2025). 'Mathematical Modeling of Uncertainty in River Cross-Sections on Hydrodynamic Parameters of Steady Flow', Sharif Journal of Civil Engineering, 41(2), pp. 28-41. doi: 10.24200/j30.2024.64363.3320

86- Ghafouri, B. and Mazaheri, M., 2025. Investigation of different evaporation scenarios in the Caspian Sea on water level and salinity of Gorgan Bay using a hydrodynamic model. Journal of Oceanography, 16(62), pp.84-103. doi: article-1-1885-fa.html

Conference Papers

More than 65 papers in Iranian congresses and conferences.

Supervised and Advised Students

Ph.D.

No.	Title	Student	Defense Year	Role
14	Investigating and modeling the effects of climate change on hydrodynamics, vertical mixing, and water residence time in the Caspian Sea	Shayan Farhadi	ongoing	Supervisor
13	Introducing a framework for sensitivity analysis of coastal areas to oil spill using the Adjoint method	Somayeh Ghaffari	ongoing	Supervisor
12	Investigation and modeling of sea water desalination on spatial and temporal salinity distribution in Caspian Sea	Neda Rezavand	ongoing	Supervisor
11	Investigation of river geometric properties uncertainty on hydrodynamic and pollutant transport models	Raziyeh Valizadeh	ongoing	Supervisor
10	Mathematical model for pollution source identification in river network using minimum measurement points	Maryam Barati	2021	Supervisor
9	Analytical solution of two-dimensional variable coefficient pollutant transport equation in river	Neda Mashhadgarme	2020	Supervisor
8	Identification of the location, extent and mass discharge into river from adjacent aquifer using the simulation-optimization method	Fatemeh Yousofvand	2023	Advisor
7	Probability model of pollutant loading in water ecosystems with analysis of the exceed risk and assessment of pollution loading loss	Bahman Fakoori	2022	Advisor
6	Identification of pollution source intensity pattern in aquifer-river system by inverse approach	Azadeh Jamshidi	2022	Advisor
5	Two-dimensional modeling of space fractional advection-dispersion equation in open channels using meshless numerical method	Zakiyeh Gholami	2022	Advisor
4	Modeling reactive transport of Calcium and Magnesium ions in calcareous soils	Mostafa Abdullahpur	2020	Advisor
3	Investigation on the effect and application of Ecohydraulic indices in river ecosystem analysis (Case study: Lar national Park, Brown trout species)	Mehdi Sedighkia	2017	Advisor
2	Experimental Study of the Effect of the obstacle's Height and Location on turbidity current controlling	Shiva Keshtkar	2016	Advisor
1	Numerical modeling of wave flume using SPH method	Ali Mahdavi	2015	Advisor

M.Sc.

No.	Title	Student	Defense Year	Role
42	Analytical solution of Volterra integral equation for pollution source identification	Kimia Hosseinabadi	ongoing	Supervisor
41	Investigation of earthquake effects on temperature and salinity stratification in dam reservoirs using numerical modeling	Ahmadreza Ghasemi	ongoing	Supervisor
40	Modeling the water residence time of the Caspian sea using the hydrodynamic model	Saba Khaghani	ongoing	Supervisor
39	Investigating the effects of the Arvand river flows on the water quality of the Persian Gulf using MIKE 21 model	Faezeh Morovat	2025	Supervisor
38	Investigating effect of Volga river discharge on the water level of Gorgan Bay	Behnaz Ghafuri	2025	Supervisor
37	Presenting a new method for pollutant transport modeling in the river network using equation-oriented modeling approach	Shayan Farhadi	2022	Supervisor
36	Inverse-in-time solution of the pollution transport equation in river using group preserving scheme	Amir Mohammad Saadat	2022	Supervisor
35	Uncertainty and sensitivity analysis of the parameters of storage zone in pollutant transport models in rivers (TSM, VART and MADE models)	Sajjad Khodambashi	2022	Supervisor
34	Investigating the susceptibility of salinity of Arvand tidal river from upstream activities	Amir Hossein Montazeri	2022	Supervisor
33	Evaluation of rivers water quality monitoring networks of Iran with using MADM	Nasrin Khodamoradi	2021	Supervisor
32	Analytical solution of pollution transport equation in river network under non-uniform flow	Mohammad Javad Fardadi	2021	Supervisor
31	Inverse-in-time analytical solution of the constant-coefficient advection-dispersion equation	Erfan Permanoon	2021	Supervisor
30	Introducing an analytical method for evaluating effect of dispersion and advection phenomenon in solute one-dimensional transport in rivers	Niloofarsadat Jafari	2020	Supervisor
29	Presenting a one-dimensional mathematical model for the transport of pollutant in rivers with non-linear fluxes approach for dead zones	Mojtaba Faraji	2019	Supervisor
28	Studying the effect of errors in estimation of advection-dispersion equation parameters and its role in applying analytical solutions.	Elham Karami Cheme	2018	Supervisor
27	Application of the inverse modeling in pollution sources identification in river using one and two-dimensional mathematical models	Siamak Amiri	2018	Supervisor

No.	Title	Student	Defense Year	Role
26	Application of the quasi-reversibility method in pollution source identification in river	Mohammad Loshabi	2017	Supervisor
25	Computation of location and intensity of an unknown point source in river using mathematical approach and investigation of parameters errors on results	Akram Dahmardan	2017	Supervisor
24	Simulation of advection and dispersion of solar humidification brine in Oman sea	Raziyeh Rabipur	2017	Supervisor
23	Simulating water level and hydrodynamics of Urmia lake under different scenarios	Hassan Hamidirazi	2017	Supervisor
22	Identify cross-section of channel by inverse solve Saint-Venant equations	Soodeh Kalami	2016	Supervisor
21	Analytical solution of pollutant transport equation with distance-dependent velocity and dispersion parameters	Nazem Bavandpuri Gilan	2016	Supervisor
20	Application of backward probability and hydrodynamic models in pollution source identification in rivers	Alireza Ghane	2015	Supervisor
19	Development of numerical solution for advection and dispersion of solute in streams containing dead zones by application of transient storage method and fractional partial derivatives	Mohammad Hatam Jafari	2015	Supervisor
18	Mathematical model of fish farming wastewater effects on river downstream and investigating the effect of CSTR retention pond remedy	Hamed Molayee	2015	Supervisor
17	Numerical solution of two-dimensional shallow water equations using shock-capturing methods and comparing different time integration schemes	Morad Asadi	2014	Supervisor
16	Numerical solution to advection-dispersion equation with transient storage zones, considering unsteady flow in irregular cross section rivers	Maryam Barati Moghaddam	2014	Supervisor
15	Analytical solutions to one- and two-dimensional advection- dispersion equation with arbitrary source term time pattern using green s function method	Neda Mashhadgarme	2013	Supervisor
14	Three-dimensional modeling of hydrodynamic and salinity of Gotvand dam reservoir	Vahid Naderkhanloo	2013	Supervisor
13	Evaluation of arranged distribution method in irrigation networks considering the uncertainty of operation using hydrodynamic model	Ali Khorshidi	2022	Advisor
12	Comparison of the model of using the aquifer vulnerability to nitrate with a three-dimensional numerical model (case study of Varamin plain aquifer)	Arezoo Noghrian	2020	Advisor
11	Comparison of distorted models with prototype in hydrodynamics using the numerical model	Sarveh Heydari	2018	Advisor

No.	Title	Student	Defense Year	Role
10	Hydrodynamic and qualitative simulation of Aras river emphasizing on the pollution load of agricultural non-point source lands for management purposes	Nasrin Badrzadeh	2016	Advisor
9	Simulation of spatial and temporal variations in hydrodynamics and water salinity of Karun river (Molasani to Farsiat) with flow changes and loading management of pollution sources in the river	Bahman Fakoori	2016	Advisor
8	Evaluating the wave and current pattern, sediment transport using Mike 21 model and remote sensing data	Morteza Karimi	2016	Advisor
7	Pollutant mixing investigation in river using 2D modelling and proposing practical relationships	Farzad Maleki	2016	Advisor
6	Development a 2D mathematical model for flow in nonhomogeneous (two layers) rockfill dam	Mehdi Naderi Pikam	2014	Advisor
5	Management utilization time and place of Karun river between the Gotvand dam to Khoramshar by applying the scenarios of salinity evacuation from the Gotvand reservoir dam	Seyed Salman Musavimahd	2013	Advisor
4	Removal of heavy metal ions (cd^{2+} and pb^{2+}) from synthetic wastewater using Loofah and pumice as natural adsorbents and evaluation of results of the proposed method using advection-dispersion modeling of pollutants in river	Nasim Jalilnejad Falizi	2013	Advisor
3	Investigating HLL and ROE schemes performance in unsteady one-dimensional gradually and rapidly varied flows with lateral flow in rivers	Ghasem Mirzayee	2012	Advisor
2	Reservoir routing via using 1D flow model and modified Pavlovsky equation simultaneously through rockfill dam	Payam Sarkhosh	2012	Advisor
1	Analysis of combined flow over weir and under gate with different geometries	Mohammad Reza Kadivar	2010	Advisor

Research Projects

- Evaluation of Iran Ministry of Energy (Water Sector) performance in 3rd and first year of 4th development plan, Islamic Parliament Research Center, 2007.
- Water resources pollution and different aspects, Islamic Parliament Research Center, 2009.
- Comparative study and diagnosis of Iran water sector governance and introducing the appropriate organization, 2012.
- Research package for drought risk management plan of Urmia Lake (Modeling of lake

hydrodynamics in different scenarios), Department of Environment, 2013.

- Legitimate and supervisory measures of water crisis related to the boundary and transboundary water resources, Islamic Parliament Research Center, 2019.
- Legitimate and supervisory measures of water crisis related to Iran sand and dust storms, Islamic Parliament Research Center, 2020.
- Development of an uncertain decision-making model of pollutant loading in river ecosystems with assessment of pollution loading loss and analysis of the reliability, Vice-Presidency for Science and Technology Affairs, The Iran National Science Foundation (INSF), 2024.

Scientific Reports:

More than 120 reports about different legislative and executive subjects of water sector and water resources management in Iran.

Executive and Professional Details:

Title	Years
Faculty Member of Tarbiat Modares University	2010-Present
Scholarship Student of Tarbiat Modares University	2006-2010
Researcher of Islamic Parliament Research Center (Water Departmant)	2004-2023
Head of Water Department of Islamic Parliament Research Center	2023-2025
Cooperation with Sazeh Pardazi Iran Consulting Engineers Co.	2005 and 2014
Head of Arak Kianpayab Consulting Engineers Co.	2003-2006

Computer Skills:

Operating System	General Software and Programming Languages	Specialized Software
Windows	Office Suite	MAPLE
Linux	Latex	MATHEMATICA
Mac	Fortran	MATLAB

Operating System	General Software and Programming Languages	Specialized Software
	Visual Basic Python	HEC-RAS MIKE 11 MIKE 21 MIKE 3 Delft 3D GIS

Journals Refereeing:

International Journals:

- Journal of Hydrology
- Journal of Environmental Management
- Environmental Pollution
- Science of the Total Environment
- Hydrological Sciences Journal
- Natural Hazards
- Nature Scientific Reports
- Water Supply
- Journal of Contaminant Hydrology
- Agricultural Water Management
- Environmental Modelling and Software
- Advances in Water Resources
- Water Resources Management

Iranian Journals:

- Sharif Journal of Civil Engineering
- Journal of Hydraulics
- Journal of Water and Irrigation Management
- Irrigation and Drainage Structures Engineering Research
- Journal of Irrigation and Water Engineering
- Journal of Irrigation Sciences and Engineering
- Journal of Civil and Environmental Engineering
- Amirkabir Journal of Civil Engineering
- Journal of Environment and Water Engineering

Workshops / Talks:

- Assessment of the Water Crisis in Iran, Tehran Chamber of Commerce, Industries, Mine and Agriculture, 2014.
- Two-Dimensional Modeling of Urmia Lake Hydrodynamics, Basin Modeling Workshop, 2014.
- Assessment of Iran Water Sector Laws and the Trends, Islamic Parliament Research Center, 2015.
- Water Role in Iran Development Plans, IRIB International Conference Center, 2015.
- Evaluation of Pressurized Irrigation Systems Performance and the Real Water Saving Workshop, Center for Strategic Studies, 2016.
- Water Security as a basis of Food Security, Center for Strategic Studies, 2017.