



Dr. Abdorreza Kabiri-Samani

Academic Position: Associate Professor

Personal:

Date of Birth: March 21, 1977

Place of Birth: Shahrekord, Iran

Marital status: Married

Work Address: Room 309, Department of Civil Engineering,
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Background:

Feb.2001-Dec.2005 Ph.D., Civil Eng. Dept., Sharif University of Tech., Tehran, Iran

Major: Hydraulics Engineering

Research Topic: Two-Phase Air-Water Flow at Water Tunnels and Pipelines

June.1999-Feb.2001 M.Sc., Civil Eng. Dept. , Sharif University of Tech., Tehran, Iran

Major: Hydraulic Structures Engineering

Research Topic: Vortex at Vertical Intakes

Aug.1995-June.1999 B.Sc., Civil Eng. Dept., Isfahan University of Tech., Isfahan, Iran

Major: Civil Engineering

Awards and Honors:

- The Youngest Premier Researcher Prize Awarded by Iranian President , 2011
- The Premier Researcher of Isfahan Province, 2011
- The Youngest Premier Researcher Prize Awarded by Chaharmahale Bakhtiari Province Elite Foundation, 2010 and 2011
- The Premier Researcher of Chaharmahale Bakhtiari Regional Water Company, 2010
- Grant Awarded by Iranian National Elite Foundation, 2008
- Rank 1 of PhD Graduated Students, Civil Engineering Department, Sharif University of Technology, 2005
- Tavakkoli Prize Awarded Due to Applicable Research, Sharif University of Technology, 2006
- Grant Awarded for Being among Top 10% of Ph.D Students by Sharif University of Technology Vice President for Education, 2003
- Rank 1 of PhD Entrance Examination, Civil Engineering Department, Sharif University of

Technology, 2001

- Rank 1 of Graduate Students, Civil Engineering Department, Sharif University of Technology, 2001
- Rank 2 of Undergraduate Students, Civil Engineering Department, Isfahan University of Technology, 1999

Research Interests:

- Hydraulics
- Hydraulic Structures
- Fluid Dynamics
- Two-Phase Air-Water Flows
- Coastal Engineering

Research Projects:

- Optimal Design of Anti-Vortex Plates
- Long-Shore Sediment Transport Rate Estimation Using Fuzzy Logic and Neural Networks
- Critical Submergence of Intakes Using Anti-Vortex Plates
- Numerical and Experimental Modeling of Two-Phase Air-Water Flow in Long Water Tunnels
- Oblique and Lateral Weirs Equations Using Experimental Data and Incomplete Self Similarity
- Free Water Surface Oscillation in a Closed Basin with Internal Barriers
- Dam Break Modeling
- Scouring in Rivers and Coastal Engineering
- Hydraulics of Subsurface Weirs
- Risk Analysis in Hydraulic Structures
- Partial Reduction of Hydraulic Jump in Irrigation and Drainage Systems
- Design and Analysis of New Dissipater Namely Grating- Netting Dissipator
- Design and Analysis of Piano-Key Weir as an Economic and Efficient Hydraulic Structure
- Turbulent Characteristics of Flow During Transition from Super- to Subcritical, without Hydraulic Jump
- Effect of Piano-Key Inlet on Hydraulics of Flow through Shaft Spillways
- Hydraulics of Flow over the Rubber Dams

Teaching Experiences:

Undergraduate courses:

Fluid Mechanics
Water Conveyance Systems
Hydraulics
Coastal Engineering
Fluid Mechanics Lab.

Graduate Courses:

Advanced Hydraulics
Advanced Hydrodynamics
Hydraulic Structures
Hydraulic Models
Concrete Dams

Professional Memberships:

- Individual Member of IAHR (International Association of Hydraulics Eng. And Research)
- Good Standing Member of Environmental and Water Resources Institute (EWRI)
- Individual Member of Iranian Hydraulic Association (IHA)
- Member of Iranian Water Resources Association
- Member of Technical Committees of Isfahan and Chaharmahal o Bakhtiari Regional Water Organizations
- Member of Research Committee of Chaharmahal o Bakhtiari Regional Water Organization
- Reviewer of Journal of Hydraulic Research, IAHR
- Reviewer of Journal of Fluids Engineering, ASME
- Reviewer of Canadian Journal of Chemical Engineering, CSChE
- Reviewer of Journal of Hydraulics, Iranian Hydraulic Association
- Reviewer of Esteghlal Journal, Isfahan University of Technology
- Reviewer of Journal of Hydraulic Engineering, ASCE
- Reviewer of Journal of Water and Wastewater, Isfahan Water and Wastewater Consulting Engineers Co.

Patents and Publications:

Journal Papers

- [Kabiri-Samani, A. R.](#), Farshi, F., Chamani, M. R., (2012), "Boundary shear stress in smooth trapezoidal open channels with the best hydraulic section ", Submitted for review and publication in Journal of Hydraulic Engineering, ASCE.
- [Kabiri-Samani, A. R.](#), Shams, M., (2012), "Hydraulics of Flow over the Weir of Subsurface Dams", Submitted for review and publication in Journal of Hydraulic Engineering, ASCE.
- [Kabiri-Samani, A. R.](#), Rabiei, M.H, Safavi, H.R. and Borghei, S.M., (2011), " Eliminating hydraulic jump from super- to subcritical flow", Submitted for review and Publication in Journal of Hydraulic Research, IAHR.
- [Kabiri-Samani, A. R.](#), Javaheri, A., (2012), "Discharge Coefficient for Free and Submerged Flow over the Piano Key Weirs", Accepted for Publication in Journal of Hydraulic Research, IAHR.
- Bakhshian, E., [Kabiri-Samani, A. R.](#), (2011), "The effect of netting dissipaters on increasing the efficiency of energy dissipation in vertical drops", Applied Mechanics and Materials, Vol. 90-93, No.2, pp. 2427-2430.
- Jouzdani, A., [Kabiri-Samani, A. R.](#), (2011), "Investigations of the difference in dam break modeling approaches between 1-D and 2-D hydrodynamic models", Applied Mechanics and Materials, Vol. 90-93, No.2, pp. 2423-2426.
- [Kabiri-Samani, A. R.](#), Borghei, S.M., (2011), " Effects of anti-vortex plates on air entrainment by free vortex ", Submitted for review and publication in Canadian Journal of Civil Engineering, CSCE.
- [Kabiri-Samani, A. R.](#) and Borghei, S. M., Esmaili, H. (2011), "Hydraulic performance of labyrinth side weirs using vanes or piles", Proceeding of Institution of Civil Eng., Water Management, ICE, Vol.164, No.WM5, pp. 229-241.
- Borghei, S. M., [Kabiri-Samani, A. R.](#) and Banihashem, A., (2010), "Influence of unsteady flow hydrograph shape on local scouring around bridge pier", Accepted for publication Proceeding of Institution of Civil Eng., Water Management, ICE.
- [Kabiri-Samani, A. R.](#), Shams, M.R., (2012), "Hydraulics of Flow over the Weir of Subsurface Dams", Submitted for review and publication in Water Resources Management Journal.
- [Kabiri-Samani, A. R.](#) and Borghei, S. M., Esmaili, H. (2010), "Hydraulic performance of labyrinth

side weirs using vanes or piles", Submitted for review and publication in Proceeding of Institution of Civil Eng., Water Management, ICE,.

- [Kabiri-Samani, A. R.](#), Ansari, A. and Borghei, S. M., (2010), " Hydraulic behaviour of flow over an oblique weir", Jou. of Hydraulic Research, IAHR, Vol. 48, No.5 pp. 669-673.
- Sui, J., Afzalimehr, H., [Kabiri-Samani, A. R.](#) and Maherani, M., (2010), "Clear-water scour around semi-elliptical abutments with armored beds", Int. Jou. Sediment Research, Vol. 25, Issue 3, pp. 233-244.
- [Kabiri-Samani, A. R.](#) and Borghei, S. M., (2010), "Pressure loss in a horizontal two-phase slug flow flow", Jou. of Fluid Eng., ASME, Vol. 132, Issue 7, pp. 1-8.
- Borghei, S. M., and [Kabiri-Samani, A. R.](#), (2010), "Effect of Anti-Vortex Plates on critical submergence at a vertical intake", International Journal of Science and Technology, Scientia-Iranica, Vol. 17, No. 2, pp. 89-95.
- [Kabiri-Samani, A. R.](#), (2010), "Analytical approach for Flow over an oblique weir", International Journal of Science and Technology, Scientia-Iranica, Vol. 17, No.2, pp. 107-117.
- [Kabiri-Samani, A. R.](#) and Ataie-Ashtiani, B., (2009), "Natural frequencies of seiche in a closed trapezoidal basin with internal barriers", Submitted for review and publication in International Journal of Engineering Science, IUST.
- [Kabiri-Samani A. R.](#), Borghei, S. M., Aghaie, J. and Jeng, D. S., (2009), "Application of neural networks and fuzzy logic models to long-shore sediment transport", Submitted for review and publication in Journal of Applied Soft Computing.
- [Kabiri-Samani, A. R.](#) and Ataie-Ashtiani, B., (2008), " Free Water Surface Oscillations in a Closed Rectangular Basin with Internal Barriers", International Journal of Science and Technology, Scientia-Iranica, Vol. 15, No. 3, pp. 315-322.
- [Kabiri-Samani, A. R.](#) and Borghei, S. M. and Saidi, M. H., (2007), " Fluctuation of air-water two-phase flow in horizontal and inclined water pipelines", Jou. of Fluid Eng., ASME, Vol. 129, Issue 1, pp. 1-14.
- [Kabiri-Samani, A. R.](#) and Borghei, S. M. and Saidi, M. H., (2006), " Entrapped air in long water tunnels during transition from pressurized to free-surface flow regime", International Jou. Of Science and Technology, Scientia-Iranica, Sharif University of Technology, Vol. 13, No. 2, pp. 174-186.
- Borghei, S. M., and [Kabiri-Samani, A. R.](#), and Nekoe, N., (2006), " Oblique weir equation using incomplete self- similarity", Can. Jou. Of Civil Eng., CSCE, Vol. 33, No. 10, pp. 1241-1250.
- Shams, M., [Kabiri-Samani, A. R.](#), Beirami, M. K., and Safavi, H. R., (2010) "Hydraulics of flow over the subsurface weirs", Submitted for review and publication in Journal of Hydraulics, IHA, (In Persian).
- Joozdani, A., [Kabiri-Samani, A. R.](#), Hajian-Nejad, M., (2010) "Hydrodynamics of dam-break phenomena in Meandering Rivers", Submitted for review and publication in Journal of Esteghlal, Isfahan University of Technology, (In Persian).
- [Kabiri-Samani, A. R.](#), Hejazi-Taghanaki, S. R., Aghajan, M., and Esmaili, H., (2010) "Discharge coefficient of side weirs using experimental data and Neural Networks Model", Accepted for publication in Journal of Sharif, Sharif University of Technology, (In Persian).
- Maherani, M., [Kabiri-Samani, A. R.](#), Afzalimehr, H., (2010) "Bridge abutment scouring, using armor layer", Accepted for publication in Journal of Hydraulics, IHA, (In Persian).
- [Kabiri-Samani, A. R.](#), Esmaili, H., and Heidarpour, M., (2010) "Improving hydraulic performance of simple side weirs using vane plates and piles", Accepted for publication in Journal of water

and wastewater, (In Persian).

- [Kabiri-Samani, A. R.](#), Borghei, S. M., and Pirghatari, A. H., (2009) "Hydraulics of two-phase air-water flow using image processing technique", Journal of Hydraulics, Vol. 4, No. 2, pp. 19-34, (In Persian).
- [Kabiri-Samani, A. R.](#), (2009) "Fluctuating characteristics of air-water slug flow in pipelines", Water and Wastewater Journal, Vol. 20, No. 2, pp. 62-68, (In Persian).
- Izadina, E., Heidarpour, M., and [Kabiri-Samani, A. R.](#), (2008) "Hydraulics of flow over the circular crested weirs", Journal of Agriculture and Natural Resources Science and Technology, Vol. 46, No. 2, pp. 815-827, (In Persian).
- [Kabiri-Samani, A. R.](#) and Borghei, S. M. and Saidi, M. H., (2006), " Two-phase Air-Water Flow Patterns in Horizontal and Near Horizontal Water Tunnels", Journal of Science and Technology, Sharif, Vol. 22, No. 35, pp. 13-21. (In Persian)
- [Kabiri-Samani, A. R.](#) and Borghei, S. M. and Saidi, M. H., (2006), " Experimental Results of Pressure Fluctuations in a Water Conduit Section Due to Formation of Unstable Two-phase Air-Water Flow", Journl of Eng., Esteghlal, Isfahan Univ. of Tech., Vol. 24, No. 2, pp. 69-86. (In Persian)

Conference proceedings

1. [Kabiri-Samani, A. R.](#) and Ansari, A., "Flow over sharp crested weirs", Proceedings of 33rd IAHR Congress, 9-14 Aug., Vancouver, Canada, 2009.
2. [Kabiri-Samani, A. R.](#), (2005), "Experimental results of pressure variation in two-phase air-water flow in water tunnels", Proc. XXXI IAHR Congress, Candidate for receiving John F. Kenedy Reward, Korea, Sept., 2005.
3. [Kabiri-Samani, A. R.](#) and Borghei, S. M. and Saidi, M. H., (2005), " Pressure variation due to sudden rise of water head at water tunnels", Proc. XXXI IAHR Congress, Korea, Sept., 2005.
4. [Kabiri-Samani, A. R.](#) and Borghei, S. M. and Saidi, M. H., Analytical/numerical model for two-phase slug flow at pipelines and water tunnels", Poster Presentation in the Int. Conf. on Hydraulics of Dams and River Structures (HDRS), 2004, Tehran, Iran.
5. [Kabiri-Samani, A. R.](#) and Ataie-Ashtiani, B., " Natural frequencies of seiche in basin with internal barriers ", proc. 8th Int. Coastal Symp., Brazil , 2004.
6. Borghei, S. M., and [Kabiri-Samani, A. R.](#) " Critical submergence of vertical intakes using anti-vortex plates ", Proc. 6th Int. Conf. on Civil Eng., Isfahan University of Tech., Isfahan, Iran, 2002.
7. Shams, M., [Kabiri-Samani, A. R.](#) and BEIRAMI, M., " Experimental modeling of subsurface weirs", Proc. 9th Iranian Hydr. Conf., Tehran, 2010 (In Persian).
8. Joozdani, A., [Kabiri-Samani, A. R.](#), " Analysis of dam-break phenomea using image processing technique ", Proc. 9th Iranian Hydr. Conf., Tehran, 2010 (In Persian).
9. Farshi, F., [Kabiri-Samani, A. R.](#), " Shear stress distribution in trapezoidal channels of the optimum hydraulic section", Proc. 9th Iranian Hydr. Conf., Tehran, 2010 (In Persian).
10. [Kabiri-Samani, A. R.](#), Hejazi-Taghanaki, S. R., Aghajan, A., Esmaili, H., " Discharge coefficient of labyrinth side weirs usinf ANN and ANFIS models ", Proc. 5th National Iranian Civil Eng. Conf., Mashhad, 2010 (In Persian).
11. Rabiei, M. H., [Kabiri-Samani, A. R.](#), " Ommission of hydraulic jump during transtion from supercritical to subcritical flow ", Proc. 5th National Iranian Civil Eng. Conf., Mashhad, 2010 (In Persian).

12. Esmaili, H., [Kabiri-Samani, A. R.](#), Heidarpoor, M., " Discharge coefficient of simple side weirs using water free surface profile ", Proc. 8th International River Engineering Conference, Ahvaz, 2009 (In Persian).
13. Maherani, M., Afzalimehr, H., [Kabiri-Samani, A. R.](#), " The effects of armor layer on scouring around bridge piers ", Proc. 8th International River Engineering Conference, Ahvaz, 2009 (In Persian).
14. Ansari, A., [Kabiri-Samani, A. R.](#), " Improving hydraulic performance of oblique weirs in channels ", Proc. 8th National Hydraulic Conference, Tehran, 2009 (In Persian).
15. Esmaili, H., [Kabiri-Samani, A. R.](#), Heidarpoor, M., " Improving hydraulic performance of sharp-crested side weirs using vanes and piles ", Proc. 8th National Hydraulic Conference, Tehran, 2009 (In Persian).
16. Aghajani, M., [Kabiri-Samani, A. R.](#), Hejazi-Taghanaki, S. R. " Discharge coefficient of labyrinth weirs using ANN model ", Proc. 8th National Hydraulic Conference, Tehran, 2009 (In Persian).
17. Ansari, A., [Kabiri-Samani, A. R.](#), " Effective length of oblique weir free flow ", Proc. 8th International Civil Eng. Conference, Shiraz, 2009 (In Persian).
18. Esmaili, H., [Kabiri-Samani, A. R.](#), " Separation length of free flow over simple and labyrinth side weirs ", Proc. 8th International Civil Eng. Conference, Shiraz, 2009 (In Persian).
19. Izadinia, E., Heidarpoor, M., [Kabiri-Samani, A. R.](#), " Effect of circular crested wier height on weir discharge coefficient ", Proc. 8th International Civil Eng. Conference, Shiraz, 2009 (In Persian).
20. Samie-Adel, T., Beirami, M. K., [Kabiri-Samani, A. R.](#), " Sluice gate flow Dischrge in a channel with constant width", Proc. 8th International Civil Eng. Conference, Shiraz, 2009 (In Persian).
21. Izadinia, E., Heidarpoor, M., [Kabiri-Samani, A. R.](#), " circular and sharp-crested weir flow surface profiles ", Proc. 2nd National Conference on Irrigation and Drainage Systems Management, Ahvaz, 2008 (In Persian).
22. Izadinia, E., Heidarpoor, M., [Kabiri-Samani, A. R.](#), " Effect of circular crested wier downstream slope on weir discharge coefficient ", Proc. 7th National Hydraulics Conference, Tehran, 2008 (In Persian).
23. Izadinia, E., Heidarpoor, M., [Kabiri-Samani, A. R.](#), " Weir flow surface profile using numerical methods ", Proc. 9th National Irrigation Conference, Kerman, 2008 (In Persian).
24. • Izadinia, E., Heidarpoor, M., [Kabiri-Samani, A. R.](#), " Discharge coefficient of sharp and Broad-crested weirs ", Proc. 3rd National Conference on watersheding and Water-Soil Resources Management, Kerman, 2008 (In Persian).
25. [Kabiri-Samani, A. R.](#) and Borghei, S. M. " Two-phase air-water slug flow characteristics using image processing technique ", Proc. 6th Iranian Hydr. Conf., Shahrekord, 2007 (In Persian).
26. [Kabiri-Samani, A. R.](#), " Two-phase flow pressure loss coefficient in pressurized pipelines ", Proc. 6th Iranian Hydr. Conf., Shahrekord, 2007 (In Persian).
27. [Kabiri-Samani, A. R.](#) and Borghei, S. M. and Saidi, M. H., " Two-phase air-water flow Patterns in sloped water tunnels ", Proc. 5th Iranian Hydr. Conf., Kerman, 2005. (In Persian)
28. [Kabiri-Samani, A. R.](#) and Borghei, S. M., " Side-weir equation using Incomplete Self-Similarity and experimental data", Proc. 5th Iranian Hydr. Conf., Kerman, 2005. (In Persian)
29. [Kabiri-Samani, A. R.](#) and Ataie-Ashtiani, B., " Free water surface oscillation with internal

barriers ", Proc. 5th Iranian Hydr. Conf., Kerman, 2005. (In Persian)

Graduate Students:

Student

Thesis Title

PhD. Students

Joozdani, Anahita



Bagheri, Sara



Farshi, Fatemeh



MSc. Students

Ansari, Ahmad



Improving Hydraulic Performance of Oblique Weirs in Channels

Esmaili, Hojjat



Improving Hydraulic Performance of Sharp-Crested Labyrinth Side Weirs Using Vanes and Piles

Maherani, Mehrnoosh

Clear-Water Scour around Semi-Circular/Elliptical Abutments with Armored Beds



Joozdani, Anahita



Shams, Mohammadreza

Hydrodynamic Modeling of Dam-Break in Meandering Rivers (Case Study: Zayandeh-Rood Dam and River)



Aghajan, Masoud

Hydraulics of Flow over the Weir of Subsurface Dams



Rabiei, Mohammad
Hossein

Discharge Coefficient of Labyrinth Side Weirs Using ANN and ANFIS Models



Ebrahimi, Safar

Omission of Hydraulic Jump During Transition from Supercritical to Subcritical Flow



Farshi, Fatemeh

Armoring Effect on Local Scouring Around the Bridge Pier under Unsteady Flow



Depth-Averaged Velocity and Boundary Shear Stress in Channels with the Best Hydraulic Section

Mansoori, Nikoo



Risk Analysis for Dam Overtopping Considering Hydraulic and Hydrologic Parameters (Vanak Dam as a Case Study)

Bakhshian, Elham



Hydraulics of Flow in Stilling Basins of Vertical Drops Using Grating/Netting Dissipators

Javaheri, Amir



Hydraulics of Flow over the Piano-Key Weirs

DavarPanah, Shahrzad

Investigation of Interaction of Straight Crested Gravel Bed Forms and Vegetated Banks on Turbulent Flow Components.

Cheraghi, Najmeh



Hydraulics of Flow over the Rubber Dams, Considering Fluid-Structure Interaction

Shemshi, Roya



Effect of Piano-Key Inlet on Hydraulics of Flow Through Shaft Spillways

Naderi, Soroush



Turbulent Characteristics of Flow During Transition from Super- to Subcritical, While the Hydraulic Jump Is Omitted

Jafari, Azadeh

Flow-Induced Vibration of Sluice Gates Due To Different Hydraulic Conditions



Nasiri, Saideh



Tavakkolian, Meysam

Numerical Modeling of Flow Field Around the Shaft Spillways Using Piano-Key Inlet



Sharif, Masoumeh

Effects of Nanosilica on the Hydraulic Abrasion Resistance of Ordinary and Self-Compacting Concrete



Abdollahi, Azam

Effects of Tail-Water Depth on Flow Characteristics at Vertical Drops Using Netting Dissipaters



Mojaddami,
Mohammad-Javad

Numerical Modeling of Flow Field Around the Labyrinth Side-Weirs Using Groups of Vane Plates



Effect of Daisy (Marguerite)-Shape Inlet on Flow Hydraulics in Shaft Spillways