Masih Zolghadr CV Updated: 01/10/2022
Assistant Professor, Dept. of Water Sciences and Engineering, Jahrom University, Fars, Iran
Ph.D. in Hydraulic Structures, Shahid Chamran University, Ahvaz, Iran (2011-2015)
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RESEARCH INTERESTS

- Numerical modeling of hydraulic processes including open channel and pressurized flows, flood propagation, dam and levee breach, waves, rivers and hydraulic structures.
- Numerical modeling of hydrologic processes including rainfall-runoff and river engineering.
- Numerical Modeling and design of urban storm water collection systems.
- Conducting laboratory Experimentations in field of hydraulics, sedimentation, scour and wave studies.

SKILLS

- Urban rainfall-runoff modeling and stormwater management (urban drainage) with EPA SWMM.
- Open channel, flood and river modeling, one and two dimensionally with HEC-RAS and TUFLOW.
- Design of hydraulic and irrigation network structures.
- Design of drainage systems for transportation projects.
- CFD modelling, dam break analysis one and two and three dimensionally with HEC-RAS and DHI package.
- Design of scour countermeasures for bridges and hydraulic structures.
- Sediment management and modelling in irrigation networks, rivers and wireways.
- Estuarine, river and wave modeling with MIKE21.
- Rural rainfall-runoff modeling and flow routing with HEC-HMS.
- Seepage modeling and slope stability analysis with GEO OFFICE (Geo-Slope, Seep/W).
- Pressurized Flow Modelling with WaterGEMS.
- Technical Drawing with AutoCAD.
- Exploring Terrestrial effects with Google Earth.
- Design of gravity dams, artificial recharge dams and associated structures and retaining walls
- Project management.
- Water distribution planning.
- Familiar with Microsoft office, GIS, QGIS, Flow 3D, DRAINS, TUFLOW, Civil3D, Origin Lab.

PROFESSIONAL SERVICES

- Journal of Water Supply, Guest Reviewer, (20 papers)
- KSCE Journal of Civil Engineering, Guest Reviewer, (2 papers)
- Iranian Journal of Science and Technology, Transaction of Civil Engineering, Guest Reviewer, (2 paper)
- Five National Journals, Guest Reviewer (15 papers)
- 11th and 12th International River Engineering Conference, Guest Reviewer, (Totally 45 papers)
- External Referee of one PhD Thesis in Civil Engineering, University of Sistan & Baluchestan, Iran.

INTERNATIONAL MEMBERSHIP

- Affiliate member of American Society of Civil Engineers (ASCE).

GRADUATE STUDENTS EXPERIENCES:

a) As a Principal Supervisor

- Presenting a method for calculating the time of concentration by hydraulic simulation (2017).
- Investigating the Effect of Inertia and Pressure terms in (one-Dimensional) Saint-Venant Equation on Hydraulic properties and Dimensions of Stormwater Collection System case study: Fars Province (Qaderabad City) (2019).
- Feasibility study of wave powered desalination in Persian Gulf (2018).
- Application of EPA SWMM, ASSA and Bently SwerGems Models to Analyze Urban Storm Water Collected by Surface Drainage Networks (Case study: New City of Lar in Fars Province) (2017).
- Two-dimensional simulation of flood for investigating the effect of check dams on flow hydraulic properties (Case study: Darvaze Quran Basin, Shiraz, Fars) (2020).
- Comparative comparison of satellite versus UAV spatial data for hydraulic simulation of river flows (2021).

b) As an Associate Supervisor

- Optimizing the elevation of roughening elements' placement on abutment as scour countermeasures.
- Effects of bed gravel and sand removal of rivers on hydraulic and geomorphological conditions, the case study of Helleh River, Bushehr Province.
- Investigating the effects of changing the distance between the super dike on the sedimentation rate of rivers.
- Declining scour at vertical wall bridge abutment through combination of roughening and six-legged elements.

PUBLICATIONS

Thesis:

- Ph.D. Thesis; "Investigating the Effect of Installation Elevation and arrangement of A-Jacks on Local Scour at Bridge Abutments" Shahid Chamran University, Iran.
- M.Sc. Thesis: "Simulation of Flow around Dike Breaches and Mapping of Flooded Areas.", Shiraz University, Iran.

National Patent (Under Review):

- M Zolghadr, SMA Zomorodian, "Electromechanical Wave maker device"
  This invention is useful for water supply and renewable energy studies.

Journal Paper:

a) International

- **M. Zolghadr**, M. R. Hashemi, S.M.A. Zomorodian , 2010 ,"Assessment of MIKE21 Model in Dam and Dike-Break Simulation" Iranian Journal of Science and Technology (IJST), Vol. 35, No. C2, pp 247-262, URL: https://ijstc.shirazu.ac.ir/article_670_a5463325a51890dd1026ee14e4391249.pdf
- M. Rezaianzade, H. Abghari, Sh.Zand Parsa, **M. Zolghadr**, V.J Sing, 2012, "Hourly air temperature driven using multi-layer perceptron and radial basis function networks in arid and semi-arid regions" , Theor. Appl. Climatol. Vol. 109, pp 519–528, URL: https://link.springer.com/article/10.1007/s00704-012-0595-0
- **M. Zolghadr**, M. Shafai Bejestan, 2020, "Six-Legged Concrete (SLC) Elements as Scour Countermeasure at Wing-Wall Bridge Abutment", INTL. J. RIVER BASIN MANAGEMENT,
  m
- M. Rashki**, M. Zolghadr**, M. Shafai Bejestan, H Md. Azmatulla, 2020, "Application of ANFIS-PSO Hybrid Algorithm for Prediction of Location of Maximum Scour and Scour Width Downstream of Ski-Jump Spillways", Iranian Journal of Science and Technology, Transaction of Civil Engineering, Vol (45), https://doi.org/10.1007/s40996-020-00413-w
- SMA Zomorodian, J. Ataie**, M. Zolgahdr**, B. Okley, 2020, "Overtopping erosion of model earthen embankments analysis using image processing approach", ICE journal of civil engineering, https://doi.org/10.1680/jwama.19.00098
- **M. Zolghadr**, S.M.A. Zomorodian, R. Shabani, H.Md. Azmathulla, 2021, "Migration of sand mining pit in rivers: An experimental, numerical and case study" Journal of Measurement, Vol. 172, https://doi.org/10.1016/j.measurement.2020.108944

- **M. Zolghadr**, M. Shafai Bejestan, A Fathi, 2022 "Protecting Vertical-Wall Bridge Abutment Using Six-Pillar Concrete Elements", Arab J Geosci 15, 1226 (2022). https://doi.org/10.1007/s12517-022-10509-4
- M Bagheri, SMA Zomorodian, **M. Zolgahdr**, H.Md. Azmathulla, 2022, "Experimental and Numerical Study of flow at a 90 Degree Lateral Turn-out with Enhanced Roughness Coefficient and Invert Elevation Changes", Water Supply (2022) 22 (4): 4193–4206, https://doi.org/10.2166/ws.2022.044
- **M. Zolghadr**, M.R. Rafiee, F. Esmailmanesh, A. Fathi, R. P. Tripathi, U. Rathnayake, S. R. Gunakala and H. M. Azamatulla 2022, "Computation of Time of Concentration Based on Two-Dimensional Hydraulic Simulation" Journal of Water, MDPI. (Accepted).
- A Fathi, S.M.A Zomorodian, **M Zolghadr**, Y.M. Chiew, 2022 "Combination of riprap and submerged vanes as an abutment scour countermeasure" sadhana-academy proceedings in engineering sciences, Springer Publications (Under Review).

b) National

- **M. Zolghadr**, M. R. Hashemi, M Zomorrodian, 2011, "Two-Dimensional Simulation of Flow around Dike System Fuse Plugs and Routing of the Outflow", Irrigation and Water Engineering 1 (2), 56-75, URL: http://www.waterjournal.ir/article_69871.html?lang=en
- **M. Zolghadr**, M. Shafai Bejestan, 2018, "Effect of Six-Legged Elements installation arrangement on bed topography around Wing-Wall Abutments", Journal of Water Resources Engineering, Vol. 36, pp 47–58, URL: http://wej.miau.ac.ir/article_3033.html?lang=en#:~:text=Generally%20the%20results%20proved%20that,are%20placed%20above%20the%20bed.
- M. Arab, S.M.A. Zomorodian**, M. Zolghadr**, 2017, "Effect of Clay Content Percentage and Compaction Energy on Pier Bridge Scour in Erosive Bed and in the vicinity of abutment", Modares Civil Engineering Journal, Vol 17(2), pp 157-166, URL: https://mcej.modares.ac.ir/article-16-11673-en.html
- N. Jafari, S.M.A. Zomorodian**, M. Zolghadr**, 2019, "Determination of Optimum Depth and Dimensions of Roughening Elements on Bridge Abutment as Scour Countermeasures", Journal of Water and Soil Researches, Vol 50(8), pp 1051-2061, URL: https://ijswr.ut.ac.ir/article_70898.html?lang=en
- F. Esmailmanesh**, M. Zolghadr,** M.R. Rafie, 2020, "Introducing Two-Dimensional Hydraulic Simulation as a Technique for Estimating the Time of Concentration", Iranian Hydraulic Association, Journal of Hydraulics, Vol 15(3), No.153, pp. 33-45, URL: http://jhyd.iha.ir/article_111273.html?lang=en
- A Jael, M Rashki Ghaleh Nou, **M. Zolghadr**, 2021, "Determining the capability of artificial intelligence in estimating energy dissipation of skimming flow regime at stepped spillways", Amirkabir Journal of Civil Engineering 53 (9), 16-16, https://ceej.aut.ac.ir/article_4115.html?lang=en
- MR Rafiee, D Rasouli, **M. Zolghadr**, M Mahbod, 2021, "Evaluation of EPA SWMM, ASSA and SewerGEMS models in analysis of urban flood collected by Surface Drainage Network (Case Study: Lar New City)" Journal of Water Resources Engineering, DOI: https://doi.org/10.22034/JCEE.2021.36567.1871
- P Baghri**, M Zolghadr**, SMA Zomorodian, 2021, "3-D simulation of bucket foundations used for offshore wind turbines under monotonic loading conditions" Journal of Civil and Environmental Engineering, URL: https://ceej.tabrizu.ac.ir/article_13363.html?lang=en
- M Bagheri, SMA Zomorrodian, **M. Zolghadr**, J Mohammadzadeh-Habili, 2020, "Declining Separation Zone Dimensions at 90° Lateral Intakes by Enhancement of Roughness Coefficient and Drop Implementation" Journal of Hydraulics 15 (1), 129-141, URL: http://jhyd.iha.ir/article_107043.html?lang=en
- **M. Zolghadr**, A Hoseinreza, MS Bajestan, 2020, "Bed Stabilization around Abutment using Combination of Six-Legged Concrete Elements and Pebbles" Journal of Ferdowsi Civil Engineering 33 (4), NO. 3, pp:33-48, https://doi.org/ 10.22067/JFCEI.2021.61563.0, URL: https://civil-ferdowsi.um.ac.ir/jufile?ar_sfile=389882
- **M. Zolghadr**, MS Bejestan, 2017, "Effect of Density and Depth of Six-Legged Elements Placement on Rectangular Abutment Scour Depth" Water and Soil Science 26 (4.1), 119-135, URL: https://water-soil.tabrizu.ac.ir/mobile/article_5862.html?lang=en
- P Keshavarz Ab Parde, **M. Zolghadr**, SMA Zomorodian, 2021, "Seawater transfer to onshore using a paddle type wave energy converter", Journal Of Marine Engineering, 17(34): 99-110, URL: http://marine-eng.ir/article-1-910-en.html

Selected Conference Papers:

- **M. Zolghadr**, M. R. Hashemi, S.M.A Zomorrodian, 2009, "Two dimensional simulation of flow around dike breaches", 8th International Congress on Civil Engineering, Shiraz University, Shiraz, Iran, URL: https://ijstc.shirazu.ac.ir/article_670_a5463325a51890dd1026ee14e4391249.pdf
- **M. Zolghadr**, M. R. Hashemi, E. Zia Hosseinpour, 2010, "Modeling of flood wave propagation through levee breach using MIKE21. A case study in Helleh River, Iran", ASCE, World Environmental and Water Resources Congress, Province Rhode Island, USA, https://doi.org/10.1061/41114(371)276
- R. A. Sharifan, A. Roshan, M. Aflatoni, A.H Jahedi**, M. Zolghadr**, 2010, "Uncertainty and Sensitivity Analysis of SWMM Model in Computation of Manhole Water Depth and Sub-Catchment Peak Flood", Sixth International Conference on Sensitivity Analysis of Model Output, Italy, https://doi.org/10.1016/j.sbspro.2010.05.205
- **M. Zolghadr**, M. R. Hashemi, E. Zia Hosseinpour, 2012, "Investigating the Optimum pattern of levee system fuse plugs by a two-Dimensional Model", ASCE, World Environmental and Water Resources Congress, Palm Springs California, USA, https://doi.org/10.1061/9780784412312.120
- **M. Zolghadr**, M. Shafai Bejestan, M. Rezaeianzadeh, 2016, "Investigating the Effect of Six-Legged Element Placement Density on Local Scour at Wing-Wall Bridge Abutments", ASCE, World Environmental and Water Resources Congress, USA, https://doi.org/10.1061/9780784479872.004
- F Jahanbakhsh, **M. Zolghadr**, 2022, "Hydraulic Simulation of Stormwater Collection System Using Dynamic and Kinematic wave methods and their Effect on Hydraulic properties and Dimensions of the pipes" 12th International River Engineering Conference, Ahvaz, Iran.
- F Raeisi, SMA Zomorodian, **M. Zolghadr,** 2022, "Investigating the effects of installation distances of sacrificial piles on bed topography around submerged pipeline" 12th International River Engineering Conference, Ahvaz, Iran.
- A Fathi, S.M.A Zomorodian, **M Zolghadr**, Y.M. Chiew, 2022 "Application of Riprap Geometry on Scour Around Spill-through Abutment" 12th International River Engineering Conference, Ahvaz, Iran.

SOCIAL LINKS AND WEBSITE

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