



Profile:

First name: **Arash**

Family name: **Malekian**

Nationality: **Iranian**

Date of Birth: **1976**

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Educational Background:

- Ph.D. degree, University of Tehran, Iran, 2008.
- MSc. degree, University of Tehran, Iran, 2002.
- BSc. degree, Gorgan University, Iran 1998.

Academic Experience:

- Professor, University of Tehran, Iran
- Member of Academy of Sciences of Iran
- Visiting Professor, Chinese Academy of Sciences, China
- Visiting Professor, University of Gottingen, Germany
- Visiting Professor, Southern University of Science and Technology, China
- Visiting Researcher, University of Wurzburg, Germany
- Visiting Researcher, University of Idaho, USA

Honors and Awards:

- Published paper in **Science** Journal (No. 1 top journal in the global journal rankings).

Curriculum Vitae: Arash MALEKIAN

- In the list of **Top five scientist** in the field of "Watershed Science" of Google Scholar;
- In the list of **Top ten scientist** in the field of "Water Resources Systems" of Google Scholar;
- Top cited article** in Wiley International Publisher journal "Land Degradation and Development".
- **Cluster Lead and Focal Point of SDG 6: Clean Water and Sanitation** in International Association of Universities (IAU)- UNESCO
- **Two times distinguished professor for international** activities, University of Tehran,
- **Distinguished professor for research** activities, University of Tehran,

Language Skills:

- English (Excellent in writing, speaking and listening)
- German (Intermediate)
- Native fluency in Azeri
- Native fluency in Persian
- Arabic (Basic)

Professional Affiliations& Memberships:

- American Water Resources Association (AWRA);
- European Water Resources Association (EWRA);
- International Association for Hydrological Sciences (IAHS).

Academic Appointments:

- Section Lead, International Center on Integrated Watershed Management in Arid Regions (UNESCO Center)
- Lecturer at the UNESCO and United Nations Office for Outer Space Affairs International Workshop
- Keynote Speaker in International Symposium on Sustainable Agriculture for Subtropical Regions (ISSASR-4), Changsha, China;

- Keynote Speaker in International Conference on Sustainable Development, Qatar University, Qatar;
- Member of the Scientific Committee of the International Conference on Hydrological Basins and River Sediment Transport Modelling, Turkey
- Member of Scientific and Organizing Committees, International Conference on Dryland Ecology, Iran
- Academic Lecture, Lanzhou University, China;
- Member of scientific and organizing committees: Water and Environment in the New Millennium, Iran;
- Member of Scientific and Organizing Committees, International Conference on Dryland Ecology, Iran.

International Journal Publication:

1. Dehghan Rahimabadi P., Liu B., **Malekian, A.**, Behrang Manesh M., Azarnivand H., Sun W., Wang B., Yang Ch., Wang ., Li W. (2026): *Early twenty-first century analysis of changes in vegetation health and carbon storage in Iran: quantifying the impacts of climate variability and human activities*, **Advances in Space Research, Elsevier**, <https://doi.org/10.1016/j.asr.2026.02.043>.
2. Shirmohammadi B. , Salehi N. , Malek Z. , **Malekian A.**, Aerts J , Booij M. , Varamesh S, Namdari E. , H. Verburg P. (2026): *Adaptation strategies and future concerns for ecological restoration of Lake Urmia Basin, Iran*, **Environmental Science and Policy, Elsevier**, <https://doi.org/10.1016/j.envsci.2026.104374>.
3. Behzad HM, Arif M, **Malekian A.** (2025). *Iran's largest river in crisis*, **Science**, 391 (6781), 132-132.
4. Wang X., Liu B., Chen J., **Malekian A.**, Zhang B., Chang Q., Liu J., You W. (2025): *Assessing the impact of land use change on habitat quality in Zhongwei through multi-scenario simulation using the PLUS and InVEST models*, **Scientific Reports, Nature**, <https://doi.org/10.1038/s41598-025-90965-6>.

5. Sun W., He, Z. Liu B., Ma D., Li R., Wang S., **Malekian A.** (2025): *Impact of long-term drip irrigation on soil organic carbon and nutrient stocks in arid oasis farmlands*, **Catena, Elsevier**, <https://doi.org/10.1016/j.catena.2025.108895>.
6. Sun W., He Z., Ma D., Liu B., Li R., Wang Sh., **Malekian A.** (2025): *Response of soil carbon and nitrogen stocks to irrigation - A global meta-analysis (2025)*. **Science of The Total Environment, Elsevier**, <https://doi.org/10.1016/j.scitotenv.2024.177641>.
7. Sun W., He Z., Liu B., Ma D., Si R., Li R., Wang Sh., **Malekian A.** (2025): *Changes in Photosynthetic Efficiency, Biomass, and Sugar Content of Sweet Sorghum under Different Water and Salt Conditions in Arid Region of Northwest China*, **Agriculture**, <https://doi.org/10.3390/agriculture14122321>.
8. Shirmohammadi B., **Malekian A.**, Varamesh S., Jafari A., Abdolahi J., Shahbazikia S., Mohsenzadeh M. (2024): *How can biomechanical measures incorporate climate change adaptation into disaster risk reduction and ecosystem sustainability?* **Natural Hazards, Springer**, 17:1-392-407.
9. Dehghan Rahimabadi P., Liu B., Azarnivand H., **Malekian A.**, Eskandari Damaneh H. (2024): *The Nexus between Land Use/Cover changes and Land Surface Temperature: Remote sensing based Two-Decadal Analysis*, **Journal of Arid Environments, Elsevier**, <https://doi.org/10.1016/j.jaridenv.2024.105269>.
10. Dehghan Rahimabadi P., Azarnivand H., Faghihi V., Yadollahzadeh B., **Malekian A.**, (2024): *Analyses of water dependency of Haloxylon ammodendron in arid regions of Iran using stable isotope technique*, **Environmental Monitoring and Assessment, Springer**, <https://doi.org/10.1007/s10661-024-13093-0>.
11. de Bourgoing Ph., **Malekian A.** (Corresponding author) (2023): *Comparison of data-driven techniques for daily streamflow forecasting*, **International Journal of Environmental Science and Technology, Springer**, 20: 10:11093-11106.

12. Kazemzadeh M., **Malekian A.**, Noori Z. (2022): *Variability and normality analysis of streamflow over a 51-year period (case study: western and northwestern Iran)*, **Sustainable Water Resources Management, Springer**, 8(6), 1-16.
13. Azimi SME, Sadatinejad SJ., **Malekian A.** Jahangir MH.(2022), *Application of artificial intelligence hybrid models for meteorological drought prediction*, **Natural Hazards, Springer**, 139:17:1-25.
14. Karakani E.G., **Malekian A.** (Corresponding author), Gholami S., Liu J. (2021): *Spatiotemporal monitoring and change detection of vegetation cover for drought management in the Middle East*, **Theoretical and Applied Climatology, Springer**, <https://doi.org/10.1007/s00704-021-03543-x>.
15. Shirmohammadi B., **Malekian A.**(Corresponding author), Salajegheh A., Taheri B., Azarnivand H., Malek Z., Verburg P.H. (2020): *Scenario analysis for integrated water resources management under future land use change in the Urmia Lake region, Iran*, **Land Use Policy, Elsevier**, <https://doi.org/10.1016/j.landusepol.2019.104299>.
16. Mirdashtvan M., **Malekian A.** (Corresponding author) (2020): A regional assessment of wet/dry spells characteristics using RCPs scenarios in a semiarid region, **Arabian Journal of Geosciences, Springer**, <https://doi.org/10.1007/s12517-020-05778-w>.
17. Shirmohammadi B., **Malekian A.** (Corresponding author), Salajegheh A., Taheri B., Azarnivand H., Malek Z., Verburg P.H. (2020): *Impacts of future climate and land use change on water yield in a semi-arid basin in Iran*, **Land Degradation and Development, Wiley**, <https://doi.org/10.1002/ldr.3554>.
18. Rahimi Balkanlou Kh. , Müller B., Cord A. F. , Panahi F., **Malekian A.**, Jafari M., Egli L. (2020) :*Spatiotemporal dynamics of ecosystem services provision in a degraded ecosystem: A systematic assessment in the Lake Urmia basin, Iran*, **Science of The Total Environment, Elsevier**, <https://doi.org/10.1016/j.scitotenv.2020.137100>.

19. Zarei A., Asadi E., Ebrahimi A., Jafari M. , **Malekian A.**, Mohammadi Nasrabadi H., Chemura A., Maskell G.(2020): *Prediction of future grassland vegetation cover fluctuation under climate change scenarios*, **Ecological Indicators, Elsevier**, <https://doi.org/10.1016/j.ecolind.2020.106858>.
20. Mirdashtvan M., Najafinejad A., **Malekian A.**, Sa'doddin A.(2020): *Regional analysis of trend and non-stationarity of hydro-climatic time series in the Southern Alborz Region, Iran*, **International Journal of Climatology, Wiley**, <https://doi.org/10.1002/joc.6313>.
21. **Malekian A.**, Choubin B., Liu J., Sajedi-Hosseini F.(2019): *Development of a New Integrated Framework for Improved Rainfall-Runoff Modeling under Climate Variability and Human Activities*, **Water Resources Management, Springer**, <https://doi.org/10.1007/s11269-019-02281-0>.
22. Karimi Sh., Jabbarian Amiri B., **Malekian A.**, (2019): *Similarity Metrics-Based Uncertainty Analysis of River Water Quality Models*, **Water Resources Management, Springer**, <https://doi.org/10.1007/s11269-019-02205-y>.
23. Sajedi-Hosseini F. , **Malekian A.**, Choubin B., Rahmati O., Cipullo S., Coulon F., Pradhan B.(2018): *A novel machine learning-based approach for the risk assessment of nitrate groundwater contamination*, **Science of the Total Environment, Elsevier**, 644, 954-962.
24. Kazemzadeh M., **Malekian A.** (Corresponding author) (2018): *Homogeneity analysis of streamflow records in arid and semi-arid regions of northwestern Iran*, **Journal of Arid Land, Springer**, 10 (4), 493-506.
25. Rahimi J., **Malekian A.**, Khalili A. (2018): *Climate change impacts in Iran: assessing our current knowledge*, **Theoretical and Applied Climatology, Springer**, <https://doi.org/10.1007/s00704-018-2395-7>.

26. Borji M., Moghadam Nia A., **Malekian A.**, Salajegheh A., Khalighi Sh. (2018): *Comprehensive evaluation of groundwater resources based on DPSIR conceptual framework*, **Arabian Journal of Geosciences**, Springer, 11 (8), 158.
27. Mirdashtvan M., Najafinejad A., **Malekian A.**, Sa'doddin A. (2018): *Downscaling the contribution to uncertainty in climate-change assessments: representative concentration pathway (RCP) scenarios for the South Alborz Range, Iran: Downscaling the contribution to uncertainty in climate-change assessments*, **Meteorological Applications**, Wiley, <https://doi.org/10.1002/met.1709>.
28. Kazemzadeh M., **Malekian A.** (2018): *Changeability evaluation of hydro-climate variables in Western Caspian Sea region, Iran*, **Environmental Earth Sciences**, Springer, 77 (4), 120.
29. Choubin B. , **Malekian A.** (2017): *Combined gamma and M-test-based ANN and ARIMA models for groundwater fluctuation forecasting in semiarid regions*, **Environmental Earth Sciences**, Springer, 76:15: 538.
30. Choubin B., Solaimani K., Roshan MH., **Malekian A.** (2017): *Watershed classification by remote sensing indices: A fuzzy c-means clustering approach*, **Journal of Mountain Science**, Springer, 14:10: 2053-2063.
31. Abari M.E., Majnounian B., , **Malekian A.** Jourgholami M. (2017): *Effects of forest harvesting on runoff and sediment characteristics in the Hyrcanian forests, northern Iran*, **European Journal of Forest Research**, Springer, 136:2: 375-386.
32. Choubin B. , **Malekian A.**, Samadi S., Khalighi-Sigaroodi Sh., Sajedi Hosseini F. (2017): *An ensemble forecast of semi-arid rainfall using large-scale climate predictors*, **Meteorological Applications**, Wiley, 24:3: 376–386.
33. Azarnivand A., Chitsaz N., **Malekian A.** (2016): *Designing a risk-based multi criteria framework for river health assessment: a case study of Taleghan basin, Iran*,

- International Journal of Hydrology Science and Technology, Inderscience**, 7:1: 63-76.
34. Chitsaz N., **Malekian A.** (2016): *Development of a risk-based multi-criteria approach for watershed prioritization with consideration of soil erosion alleviation (case study of Iran)*, **Environmental Earth Sciences, Springer**, 75:22:1448-1461.
35. **Malekian A.**, Azarnivand A., (2016): *Application of integrated Shannon's entropy and VIKOR techniques in prioritization of flood risk in the Shemshak watershed, Iran*, **Water Resources Management, Springer**, 30:1:409-425.
36. Borji M., **Malekian A.**, Salajegheh A., Ghadimi M.(2016): *Multi-time-scale analysis of hydrological drought forecasting using support vector regression (SVR) and artificial neural networks (ANN)*, **Arabian Journal of Geosciences, Springer**, 9:19:725-735.
37. Kazemzadeh M., **Malekian A.** (2016): *Spatial characteristics and temporal trends of meteorological and hydrological droughts in northwestern Iran*, **Natural Hazards, Springer**, 80:2:191-210.
38. **Malekian A.**, Kazemzadeh M. (2016): *Spatio-temporal Analysis of Regional Trends and Shift Changes of Autocorrelated Temperature Series*, **Water Resources Management, Springer**, 30:2: 785-803.
39. Khosravi Gh., Nafarzadegan A.R., Nohegar A., Fathizadeh H., **Malekian A.** (2015), *A modified distance-weighted approach for filling annual precipitation gaps: application to different climates of Iran*, **Theoretical and Applied Climatology, Springer**, 119:1-2: 33-42.
40. Ghadimi M. , Moghimi E, Sahebi M.R., **Malekian A.**,Ahmadi, M., (2015): *A new approach for preparing the geomorphological map based on the active rock glaciers in southwestern Iran*, **Arabian Journal of Geosciences, Springer** 8:11:9693-9698.

41. Choubin B., Khalighi-Sigaroodi Sh., **Malekian A.**, Kişi O. (2016): *Multiple linear regression, multi-layer perceptron network and adaptive neuro-fuzzy inference system for the prediction of precipitation based on large-scale climate signals*, **Hydrological Sciences Journal**, Taylor and Francis, 61:6:1001-1009.
42. Choubin B., Khalighi-Sigaroodi Sh., **Malekian A.**, Ahmad S., Attarod P., (2014): *Drought forecasting in a semi-arid watershed using climate signals: a neuro-fuzzy modeling approach*, **Journal of Mountain Science**, Springer, 11:6:1593-1605.
43. Osati Kh., Koeniger P., Salajegheh A., Mahdavi M., Chapi K., **Malekian A.**, (2014): *Spatiotemporal patterns of stable isotopes and hydrochemistry in springs and river flow of the upper Karkheh River basin, Iran*, **Isotopes in Environmental & Health Studies**, Taylor and Francis, 50:2:169-183.
44. Ghayoumian J., Saravi MM, Feiznia S, Nouri B, **Malekian A.**, (2007): *Application of GIS techniques to determine areas most suitable for artificial groundwater recharge in a coastal aquifer in southern Iran*, **Journal of Asian Earth Sciences**, Elsevier, 30 (2), 364-374.

International book chapter

1. **Malekian A.**, Chitsaz N. (2021): *Concepts, procedures, and applications of artificial neural network models in streamflow forecasting* (Chapter 4), In: *Advances in Streamflow Forecasting*, Elsevier.
2. Ebrahimi-azarkharan F., Ghorbani M., **Malekian A.**, Bressers H. (2020): *Analyzing Stakeholders' Network to Water Resources Co-management at a Watershed Scale: A Case Study from the Taleghan Watershed in Iran* (Chapter 9), In: *Networks in Water Governance* (Edited by Manuel Fischer, Karin Ingold), Palgrave MacMillan.
3. Ahmadi H., Nazari Samani A., **Malekian A.** (2010): *The Qanat: A Living History in Iran* (Chapter 8), In: *Water and Sustainability in Arid Regions* (Edited by Schneier-Madanes, Courel), Springer.

Conference papers

1. **Malekian A.** (2024): Scenario analysis for sustainable water resources management under future anthropogenic and climate change impacts" in 4th International Symposium on Sustainable Agriculture for Subtropical Regions (ISSASR-4), Changsha, China.
2. **Malekian A.** (2019): Sustainable Water Resources Management and Virtual Water Flow, Science for Sustainable Development Conference, Qatar University, Qatar.
3. **Malekian A.** (2018): Water Accounting as an Efficient Tool for Sustainable Water Governance (Case study: Urmia Lake Basin), Water Security and Climate Change Conference, Kenya.
4. **Malekian A.** (2017): Scenario-based Integrated Water Resources Management Under Changing Climate, Water Security and Climate Change Conference, Germany.
5. **Malekian A.,** Salajegheh A., (2016): A risk-based conflict resolution for optimum water resources management in arid regions, International Water Conference 2016 Water Resource in Arid areas: The Way Forward, Oman.
6. Saravi M.M., Shahbazi R., **Malekian A.,** (2015): Drought and water scarcity in Iran: How to cope with and prepare for it?, International Conference on Drought: Research and Science-Policy Interfacing, Spain.
7. **Malekian A.** (2014): Stochastic modeling of spatio-temporal characteristics of droughts in southern Iran, 6th Leonardo Conference 2014 on Hyper Droughts, The Czech Republic.
8. **Malekian A.,** Rahimian, M. (2012): Determining Amount of Sediment Transport of Mojen River by ANN And Mathematical Method, International Conference Sediment Transport Modeling in Hydrological Watersheds and Rivers, Turkey.
9. Soleimani H., Rashidfar M., **Malekian A.** (2011): Effect of Salinity and Drought by Using NaCl 99.99 and PEG 6000 on Some Growth Factors on *Anabasis aphylla*, 2nd International Conference on Environmental Engineering and Applications, Singapore.

10. **Malekian A.**, Mahdavi M. (2010): A Scenario-Based Management of Water Resources in a Basin Scale, The 2nd International Geography Symposium, Turkey.
11. **Malekian A.**, Hasani M. (2010): Analysis of Long-term drought in Fars Province, Iran, The 2nd International Conference on Climate Change in Caspian Ecosystems, Iran.
12. **Malekian A.**, Mahdavi M., Gharachelo S. (2010): The Role of Hydro-Chemical Condition of Groundwater in Degradation of Arid Lands, The 2nd International Geography Symposium, Turkey.
13. **Malekian A.** (2009): Analysis of stream flow using non-linear approaches, 6th International Symposium on Digital Earth, China.
14. **Malekian A.**, Mahdavi M., Zehtabian Gh.R., Mohseni Saravi M. (2008): A Risk-based Management Model for Optimal Allocation of Water Resources in Arid Regions, 3rd International Conference on Water Resources and Arid Environments, Saudi Arabia.
15. Ahmadi H., Asgari H.M., **Malekian A.**, Link T.E., Tahmouras M, Biniyaz M.(2007): Estimation of Daily Suspended Sediment Yield Based on Neural Networks and Neuro-Fuzzy Techniques, Annual Meeting & International Conference on Integrated Watershed Management, American Institute of Hydrology, Reno, USA.
16. **Malekian A.**, Mahdavi M., Mohseni Saravi M. (2006): Evaluation of the effects of land management and morphometric factors on peak discharges. International Symposium for Water and Land Management for Sustainable Agriculture, Turkey.
17. Abasizadeh, M., **Malekian A.**, Mohseni Saravi M. (2006): Comparison of Regional Flood Frequency Analyses, Eighth International Conference on Development of Drylands, China.
18. Mohseni Saravi M., Safdari, A., **Malekian A.** (2005): Analysis of droughts using the standardized precipitation index (SPI) in Karoon river basin, Iran, International Conference of European Water Resources Association, France.
19. **Malekian A.**, M. Mohseni Saravi, (2005): Relationship between peak flow and basin characteristics, International Conference on the fluvial systems-past and present dynamics and controls, Germany.
20. **Malekian A.**, Mohseni Saravi M., M. Mahdavi (2004): Modified soil antecedent conditions for curve number, International Conference "Eurosoil 2004", Germany.

21. Chaichi, M.R., M.M. Saravi, **Malekian A.** (2003), Trampling effects of livestock on soil physical properties and range vegetation cover, Proceedings of the VII International Rangeland Congress, South Africa.
22. Saravi, M.M., **A. Malekian** (2003): Hydro-geochemical conditions of groundwater in Tehran Plain, Proceedings of International Conference on Soil and Groundwater Contamination & Clean-up in Arid Countries (ICSGCC 2003), Sultanate of Oman.
23. **Malekian A.**, M.M. Saravi, H. Rouhani (2003): Economics of groundwater pollution (Preliminary results of studies in Tehran plain), Proceedings of International Conference on Soil and Groundwater Contamination & Clean-up in Arid Countries (ICSGCC 2003), Sultanate of Oman.