

**Dr. Mahdi Erfanian (Ph.D.)**

Associate Professor (Tenured), Watershed Hydrology and Remote Sensing,  
Department of Watershed Management Engineering,  
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**Positions:**

Associate Professor, May 2018-Present (Full-Time)

Assistant Professor, July 2008- May 2017(Full-Time)

Head of Department (4 years: Feb. 2016- Feb. 2019)

**Education:**

● **Ph.D.** in Civil Engineering (Hydrology), Department of Civil Engineering, River and Environmental Engineering Laboratory (REEL), **The University of Tokyo**, 2004-2008, Tokyo, Japan.

**World Education Services Verified International Academic Qualifications: Badge Evidence (U.S.A.)**

- **Master** in Naural Resources Engineering-Watershed Management, Gorgan University of Agricultural Sciences and Naural Reources, **Gorgan, Iran, 1996-1998**
- **Bachelor** in Naural Resources Engineering- Range and Watershed Management, Gorgan University of Agricultural Sciences and Naural Reources, **Gorgan, Iran, 1991-1995**

**Sabbatical Research:**

Visiting Professor at Faculty of Engineering, Department of Civil and Environmental Engineering (**Western University, Canada**). During my stay at Western, I carrioud out a substantial part of a collaborative research work on “Climate change impacts on spatio-temporal variability of Hydro-climate extremes in the Urmia Lake Basin, Iran”. I satyed at Western University as of 12 Feb. 2019 for a period of six months. **Host Professor:** [Dr. M. Reza Najafi](#), Associate Professor, Department of Civil and Environmental Engineering, **Email:** [mnajafi7@uwo.ca](mailto:mnajafi7@uwo.ca)

**Google Scholar and Webpage:**

<https://scholar.google.com/citations?user=v895nrsAAAAJ&hl=en>

**H-index: 11 i10-index:11 Citations: 448 (August 12, 2023)**

<http://facultystaff.urmia.ac.ir/site/cv.aspx?stid=489&Ln=en>

**Ph.D. Dissertation:**

Sensitivity analysis and parameter optimization of land surface models to improve surface flux estimation, **Supervisors: Prof. Toshio KOIKE** (*Emeritus Professor*), **Prof. Kun YANG**

#### **Supervisors and References:**

1) **Prof. Toshio KOIKE**, *International Center for Water Hazard and Risk Management*, Japan (H-index:60)  
<https://scholar.google.com/citations?user=mcmlXsAAAAAJ&hl=en>

2) **Prof. Kun Yang** (Tsinghua University: H-Index: 75):  
<https://scholar.google.com/citations?user=raOiufQAAAAAJ&hl=en>

A) **Prof. Taikan OKI** (The University of Tokyo: H-index: 79)  
<https://scholar.google.com/citations?user=YpyhRiAAAAAJ&hl=en>

B) **Prof. Shinjiro KANAE** (Tokyo Institute of Technology: H-index: 60)  
<https://scholar.google.com/citations?user=Swa0sTQAAAAAJ&hl=zh-CN>

**Research Interests:** Surface hydrology, rainfall-runoff modeling, Soil and Water Assessment Tool (model optimization and sensitivity analysis), Geo-spatial modeling, watershed health and suitability assessment, water resources quality and pollution, land use change modeling, drought analysis, climate change impacts, climate variability and extreme indices, Copulas for hydro-climatic analysis, groundwater modeling, ecosystem services modeling.

#### **Awards and Honors:**

##### **Scholarship for Doctoral Program:**

1. A **3.5-year scholarship** (Oct. 2004- Mar. 2008) was awarded by the Iranian Ministry of Science, Research and Technology (**MSRT**) for doctoral studies in the University of Tokyo, **Tokyo, Japan**
2. **The first-rank student (B.Sc. Course):**  
Achieving the highest **GPA (= 18.20 out of 20)** among B.Sc. graduated students, Gorgan University of Agricultural Sciences and Natural Resources, September 1995, **Gorgan, Iran**
3. **The first-rank student (M.Sc. Course):**  
Achieving the highest **GPA (= 18.12 out of 20)** among M.Sc. graduated students, Gorgan University of Agricultural Sciences and Natural Resources, September 1998, **Gorgan, Iran**

#### **Teaching Records:** 2008-Present (In Persian):

1. **Bachelor of Science (B.Sc.)** : Applied hydrology, principles of remote sensing, applied statistics, geographic information system (GIS)
2. **Master of Science (M.Sc.):** Flood control and management, advanced geographic information system (GIS), advanced remote sensing (RS), integrated watershed management, hydrometeorology
3. **Doctoral Program (Ph.D.):** Advanced hydrology, advanced watershed management, advanced hydrogeology, water resources pollution, watershed health and sustainability assessment.

- **Publications in Journals (Peer Reviewed)**

1. Choobeh, S., Abghari, H., and Erfanian, M. 2023 **Spatial and temporal variability of precipitation based on marginal and apportionment entropy disorder indices in Iran.** *Theoretical and Applied Climatology*, Accpeted (Proof-reading).
2. Choobeh, S., Abghari, H., and Erfanian, M. 2023 **Investigating and classifying temporal-spatial characteristics of Iran’s annual precipitation using maximal overlap discrete wavelet transform and multiscale entropy.** *Desert Ecosystem Engineering Journal (DEEJ)*, 12(1):11-26
3. Mirzaei Hassanlu, A., Erfanian, M., Javan, K., and Najafi M.R. 2023 **Analysis of monthly rainfall trend using innovative graphical and classical method in synoptic stations of Lake Urmia Basin.** *Iranian Journal of Watershed Management Sciences and Engineering*, In Press, 14:62
4. Mirzaei Hassanlu, A., Erfanian, M., and Javan, K. 2023 **Daily precipitation concentration and Shannon’s entropy characteristics: spatial and temporal variability in Iran, 1966–2018.** *Theoretical and Applied Climatology*. <https://doi.org/10.1007/s00704-023-04647-2>
5. Ebadi Nahari, Z., Erfanian, M., and Kazempour Choursi, S. 2023 **A new method for evaluation and comprehensive drought monitoring in the Urmia Lake basin using a synthesized drought index (SDI),** *Journal of Applied Researches in Geographical Sciences*, 23(68): 243-257 <https://jgs.khu.ac.ir/article-1-3290-en.html>
6. Mahmoudi, M., and Erfanian, M. 2022 **Water quality assessment of surface and groundwater resources in the Naghadeh-Oshnavieh Plain,** *Environmental Researches*, 13(25): 33-50. <https://dorl.net/dor/20.1001.1.20089597.1401.13.25.3.4>
7. Amiri, T., Banj Shafiei, A., Erfanian, M., Hosseinzadeh, O., and Beygi Heidarlou, H. 2023 **Using forest fire experts’ opinions and GIS/remote sensing techniques in locating forest fire lookout towers.** *Applied Geomatics*, 15(1), 45-59. <https://doi.org/10.1007/s12518-022-00476-6>
8. Feizy, B., Ahmadifard, N., and Erfanian, M. 2022 **Evaluation of water quality in Zarivar Lake of Kurdistan province using qualitative indicators TLI, TSI and WQINSF.** *Journal of Wetland Ecobiology*,14:101-110. Abstract in English: <http://jweb.ahvaz.iau.ir/article-1-1013-en.html>
9. Babaei, S., Ghazavi, R., and Erfanian, M. 2021 **Quantifying the impact of urban runoff injection on groundwater enhancement in a semi-arid environment using SWMM and MODFLOW Model.** *Global NEST Journal*, 23(4): 556-564. <https://doi.org/10.30955/gnj.003275>
10. Salimi, S., Eshaghi Rad, J., Erfanian, M., and Alijanpour, A. 2021 **Estimation of woody species richness and diversity using Landsat 8 OLI Satellite images.** *BOSQUE*, 42 (3): 383-393 <http://revistas.uach.cl/index.php/bosque/article/download/6843/7751/>
11. Feizy, B., Ahmadifard, N., and Erfanian, M. 2021 **Study of changes in vegetation and water level in Zarivar Lake using Landsat satellite in the period 1984 to 2016.** *Journal of Wetland Ecobiology*, 13(4):19-34. Abstract in English: <http://jweb.ahvaz.iau.ir/article-1-970-en.html>
12. Souri, M., Alibegy, T., Erfanian, M., Motamedi, J., Khalifezadeh, R. 2021. **Evaluation of GPP based on NDVI index with MODIS sensor in estimating rangeland production (Resin Basin of Kermanshah Province),** *Iranian Journal of Rangeland and Desert Research*, 28(1): 21-33. <https://dx.doi.org/10.22092/ijrdr.2021.123850>

13. Davarpanah, S., Erfanian, M., and Javan, K. 2021 **Assessment of climate change impacts on drought and wet spells in Lake Urmia basin.** *Pure and Applied Geophysics*, 178(2): 545-563. <https://doi.org/10.1007/s00024-021-02656-8>
14. Mirzayi Hasanlo, A., Abghari, H., Erfanian, M., and Choobe, S. 2021 **An assessment of spatial and temporal changes in precipitation and drought at synoptic stations in Iran.** *Watershed Management Research*, 33(4):123-141. <https://dx.doi.org/10.22092/wmej.2020.341216.1298>
15. Salmalian, M., Mousavi-Mirkala, S.R., Erfanian, M. and Hosseinzadeh, O. 2021 **Applying Delphi approach and TOPSIS method in designing forest road network using GIS (case study: Lacobon forests, Abbasabad, Mazandaran).** *Journal of Forest Research and Development*, 6 (4): 695-713. <https://dx.doi.org/10.30466/jfrd.2020.120868>
16. Mirzayi Hasanlo, A., Abghari, H., and Erfanian, M. 2020 **The effect of teleconnection patterns on rainfall and drought in the Urmia Lake basin,** *Journal of the Earth and Space Physics*, 46(3): 537-559. <https://dx.doi.org/10.22059/jesphys.2020.292304.1007175>
17. Mirzayi Hasanlo, A., Abghari, H., and Erfanian, M. 2020 **Rainfall trend analysis and precipitation concentration index in synoptic stations of Urmia Lake basin,** *Geography and Development*, 18 (59), 21-40. [https://gdij.usb.ac.ir/article\\_5458.html?lang=en](https://gdij.usb.ac.ir/article_5458.html?lang=en)
18. Saffarinia, S., Abghari, H., and Erfanian, M. 2020 **Development of fuzzy water quality index in qualitative evaluation of water upstream and downstream of Mahabad reservoir dam.** *Journal of Range and Watershed Management*, 73(3): 525-540. <https://dx.doi.org/10.22059/jrwm.2020.301997.1498>
19. Beygi Heidarlou, H., Banj Shafiei, A., Erfanian, M., Tayyebi, A., and Alijanpour, A. 2020 **Forecasting deforestation and forest recovery using Land Transformation Model (LTM) in Iranian Zagros forests.** *Journal of forest research and development*, 17(4): 527-544, <https://dx.doi.org/10.30466/jfrd.2021.53873.1572>
20. Beygi Heidarlou, H., Banj Shafiei, A., Erfanian, M., Tayyebi, A., and Alijanpour, A. 2020 **Land cover changes in northern Zagros forests (NW Iran) before and during implementation of energy policies.** *Journal of Sustainable Forestry*, 1-15. <https://doi.org/10.1080/10549811.2020.1747026>
21. Beygi Heidarlou, H., Banj Shafiei, A., Erfanian, M., Tayyebi, A., and Alijanpour, A. 2020 **Armed conflict and land-use changes: Insights from Iraq-Iran war in Zagros,** *Forest Policy and Economics* 118, 102246. <http://dx.doi.org/10.1016/j.forpol.2020.102246>
22. Beygi Heidarlou, H., Shafiei, A. B., Erfanian, M., Tayyebi, A., and Alijanpour, A. 2020 **Underlying driving forces of forest cover changes due to the implementation of preservation policies in Iranian northern Zagros forests.** *International Forestry Review*, 22(2): 241-256. <http://dx.doi.org/10.1505/146554820829403531>
23. Ghazavi, R., Babaei, S., and Erfanian, M. 2019 **Mapping of the urban sub-basins prone to flood using PCA method as a new weighting technique.** *Journal of Natural Environmental Hazards (JNEH)*, 8(20): 83-100. <https://dx.doi.org/10.22111/jneh.2018.22431.1330>

24. Sadeghi, S.H.R., Kazemi Kia, S., Erfanian, M. and Movahed, S.M.S. 2019 **Identifying representative watershed for the Urmia Lake basin, Iran.** *Environmental monitoring and assessment*, 191(1):1-16. <https://doi.org/10.1007/s10661-018-7147-8>
25. Kazempour Choursi, S., Erfanian, M., and Ebadi Nehari, Z. 2019 **Evaluation of MODIS and TRMM satellite data for drought monitoring in the Urmia Lake Basin.** *Journal of Geography and Environmental Planning*, 30(2):16-34.
26. Beygi Heidarlou, H., Banj Shafiei, A., Erfanian, M., Tayyebi, A. and Alijanpour, A. 2018 **Effects of preservation policy on land use changes in Iranian Northern Zagros forests,** *Land Use Policy*, 81: 76-90 <https://doi.org/10.1016/j.landusepol.2018.10.036>
27. Javan, K., Rasouli, A.A., Erfanian, M., and Sari Sarraf, B. 2018 **Comparative evaluation of rainfall estimation methods in Urmia Lake Basin.** *Geographic and Planning*, 22 (65), 83-100. [https://geoplanning.tabrizu.ac.ir/article\\_8247.html?lang=en](https://geoplanning.tabrizu.ac.ir/article_8247.html?lang=en)
28. Sadeghi, S.H.R., Kazemikia, S., Hazbavi, Z., Erfanian, M., and Movahed, S.M.S. 2018 **A blueprint for elementary representative watershed specification,** *AGROFOR International Journal*, 3 (2). [http://agrofor.ues.rs.ba/data/20180827-agrofor\\_Vol3\\_issue2.pdf](http://agrofor.ues.rs.ba/data/20180827-agrofor_Vol3_issue2.pdf)
29. Hatami Jarabad, Erfanian, M., and Babaei Hesar, S. 2018 **Estimation of daily net radiation in the Urmia Lake basin under clear-sky conditions based on MODIS data.** *Physical Geography Research Quarterly*, 50(4): 669-684. <https://dx.doi.org/10.22059/jphgr.2018.231345.1007036>
30. Babaei, S., Ghazavi, R. and Erfanian, M. 2018 **Urban flood simulation and prioritization of critical urban sub-catchments using SWMM model and PROMETHEE II approach.** *Physics and Chemistry of the Earth, Parts A/B/C*, 105, 3-11. <https://doi.org/10.1016/j.pce.2018.02.002>
31. Ghazavi, R., Babaei, S., and Erfanian, M. 2018 **Recharge wells site selection for artificial groundwater recharge in an urban area using fuzzy logic technique.** *Water Resources Management*, 32, 3821–3834 <https://doi.org/10.1007/s11269-018-2020-7>
32. Ahmady-Birgani, H., Agahi, E., Ahmadi, S.J. and Erfanian, M. 2018 **Sediment source fingerprinting of the Lake Urmia sand dunes.** *Scientific Reports (Nature)*, 8 (206), 1-15. <https://doi.org/10.1038/s41598-017-18027-0>
33. Amiri, T., Banj Shafiei, A., Erfanian, M., Hosseinzadeh, O., and Beygi Heidarlou, H. 2018 **Locating suitable areas for forest fire fighting stations in Sardasht, NW Iran.** *Journal of Forest Research and Development*, 10 (3), 319-335. [http://www.ijf-isaforestry.ir/article\\_79996\\_en.html](http://www.ijf-isaforestry.ir/article_79996_en.html)
34. Narimani, R., Erfanian, M., Nazarnejad, H., and Mahmoodzadeh, A. 2017 **Evaluating the impact of management scenarios and land use changes on annual surface runoff and sediment yield using the GeoWEPP: A case study from the Lighvanchai watershed, Iran.** *Environmental Earth Sciences*, 76 (353), 1-15. <https://link.springer.com/article/10.1007%2Fs12665-017-6694-6>
35. Najafzadeh, A., Erfanian, M., Alijanpour, A. and Babaei Hesar, S. 2017 **Recovering missing pixels for a Landsat SLC-Off image using Weighted Linear Regression and accuracy assessment**



- of land cover map (Case study: Khoy region, Northwest Iran). *Journal of Forest Research and Development*, 3 (3), 275-289. [http://jfrd.urmia.ac.ir/article\\_20476.html](http://jfrd.urmia.ac.ir/article_20476.html)
36. Khezri Dashkasan, S.S., Alijanpour, A., Hosseinzadeh, O. and Erfanian, M. 2017 Site selection for forest park using multi-criteria decision approach in the Darreh Shohada region, Urmia. *Journal of Forest Research and Development*, 3 (2), 133-146. [http://jfrd.urmia.ac.ir/article\\_20288.html?lang=en](http://jfrd.urmia.ac.ir/article_20288.html?lang=en)
37. Amiri, T., Banj Shafiei, A., Erfanian, M., Hosseinzadeh, O., and Beygi Heidarlou, H. 2017 Determining of effective criteria in locating firefighting station in forest. *Journal of Forest Research and Development*, 2 (4), 379-393. <https://dx.doi.org/10.30466/jfrd.2017.20271>
38. Ghobadi, S., Abghari, H. and Erfanian, M. 2017 Monitoring spatial and temporal distribution of drought intensity using isoSDI and isoSPI in the west of Urmia Lake. *Journal of Soil and Water Conservation*, 24 (5), 111-127. <https://dx.doi.org/10.22069/jwsc.2017.11938.2646>
39. Salmalian, M., Mousavi-Mirkala, S.R., Erfanian, M. and Hosseinzadeh, O. 2016 Prioritization of the influencing factors in the designing forest roads (Case study: Lakobon forest, Abbas-Abad, North of Iran). *Journal of Forest Research and Development*, 1 (4), 337-349. <https://dx.doi.org/10.30466/jfrd.2020.120868>
40. Rasouli, A.A., Erfanian, M., Sari Sarraf, B. and Javan, K. 2016 Comparative evaluation of TRMM estimated rainfall amounts and rainfall recorded by ground stations in Lake Urmia Basin. *Journal of Geographic Space* (54), 195-217. <http://geographical-space.iau-ahar.ac.ir/article-1-2543-fa.html>
41. Rasouli, A.A., Erfanian, M., Sari Sarraf, B. and Javan, K. 2016 Evaluating a conceptual model of cloud to predict 6-hour rainfall in the Lake Urmia Basin. *Journal of Geography and Territorial Spatial Arrangement*, 6 (20), 183-202. <https://dx.doi.org/10.22111/gaij.2016.2708>
42. Hosseinkhah, M., Erfanian, M. and Alijanpour, A. 2016 Modeling the effects of land use on water quality parameters using OLS and GWR multivariate regression methods in Fars province watersheds. *Journal of Environmental Studies*, 42 (2), 353-373. <https://dx.doi.org/10.22059/jes.2016.58738>
43. Erfanian, M., Kazempour, S. and Heidari, H. 2016 Calibration of TRMM satellite 3B42 and 3B43 rainfall data in climatic zones of Iran. *Journal of Physical Geography Research*, 48 (2), 287-303. <https://dx.doi.org/10.22059/jphgr.2016.59370>
44. Erfanian, M., Farajollahi, H., Souri, M. and Shirzadi, A. 2016 Comparing the efficiency of weight of evidence, logistic regression and frequency ratio methods for mapping groundwater springpotential in Chelgazi watershed, Kordestan Province of Iran. *Journal of Water and Soil Sciences*, 20 (75), 59-72. <https://jstnar.iut.ac.ir/article-1-3275-en.html>
45. Erfanian, M. and Babaei Hesar, S. 2016 Trend analysis of reference evapotranspiration (ET<sub>0</sub>) and precipitation at some synoptic stations of the Urmia Lake basin. *Journal of Water Research*, 10 (1), 153-162. [http://iwrj.sku.ac.ir/article\\_10465.html?lang=en](http://iwrj.sku.ac.ir/article_10465.html?lang=en)
46. Saber Chenari, K., Abghari, H., Erfanian, M., Ghaderi, M., Salmani, H., and Asadi Nilvan, O. 2016 Optimization reservoir operation policy with approach reduces probability of inflow using

- genetic algorithm (The Case Study: Mahabad Reservoir Dam). *Watershed Management Researches*, 29 (11), 34-43. [https://wmrj.areeo.ac.ir/article\\_112229.html?lang=en](https://wmrj.areeo.ac.ir/article_112229.html?lang=en)
47. Erfanian, M., Ghahremani, P. and Saadat, H. 2015 Assessment of soil erosion risk using a fuzzy model in Gharnaveh watershed, Golestan Province. *Journal of Water and Soil Conservation*, 21 (6), 135-154. <https://dorl.net/dor/20.1001.1.23222069.1393.21.6.7.2>
  48. Beygi Heidarlou, H., Banj Shafiei, A., and Erfanian, M. 2015 Forest fire risk mapping using analytical hierarchy process technique and frequency ratio method (Case study: Sardasht Forests, NW Iran), *Journal of Forest and Poplar Research*, 22 (4), 559-573 [https://ijfpr.areeo.ac.ir/article\\_13172.html?lang=en](https://ijfpr.areeo.ac.ir/article_13172.html?lang=en)
  49. Erfanian, M., Bayazi, M., Abghari, H. and Esmali Ouri, A. 2015 Monthly simulation of streamflow and sediment using the SWAT in Nazlochai and prioritization of critical regions. *Journal of Watershed Engineering and Management*, 7 (4), 552-562. <https://dx.doi.org/10.22092/ijwmse.2015.103142>
  50. Erfanian, M. and Babaei Hesar, S. 2015 Developing PMF56-Hybrid model and its application to predict reference evapotranspiration (ET<sub>0</sub>) in the Urmia Lake Basin. *Journal of Water and Soil Sciences*, 18 (70), 193-204. [https://jstnar.iut.ac.ir/browse.php?a\\_id=2933&sid=1&slc\\_lang=en](https://jstnar.iut.ac.ir/browse.php?a_id=2933&sid=1&slc_lang=en)
  51. Beygi Heidarlu, H., Banj Shafiei, A. and Erfanian, M. 2015 Evaluating the fuzzy weighted linear combination method in forest fire risk mapping (Case study: Sardasht forests, West Azerbaijan Province, IRAN). *Journal of Wood and Forest Science and Technology*, 22 (3), 29-52. <https://dorl.net/dor/20.1001.1.23222077.1394.22.3.2.8>
  52. Beygi Heidarlu, H., Banj Shafiei, A. and Erfanian, M. 2015 Forest fire risk mapping using analytical hierarchy process (AHP) technique and frequency ratio method (Case study: Sardasht forests, NW Iran). *Journal of Forest and Poplar Research*, 22 (4), 559-573. <https://dx.doi.org/10.22092/ijfpr.2015.13172>
  53. Yousefi Mobarhan, E., Abghari, H. and Erfanian, M. 2014 Investigation of different time scales rainfall-runoff modeling and calibration using HMS-SMA. *Journal of Watershed Management Researches*, 101, 79-87.
  54. Erfanian, M., Vafaei, N. and Rezaeianzadeh, M. 2014 A new method for drought risk assessment by integrating TRMM monthly rainfall data and the Terra/MODIS NDVI data in Fars Province, Iran. *Journal of Physical Geography Research*, 46 (1), 93-108. <https://dx.doi.org/10.22059/jphgr.2014.50621>
  55. Erfanian, M., Ghahremani, P. and Saadat, H. 2014 Mapping of potential soil erosion hazard using fuzzy logic in Gharnave watershed, Golestan Province. *Journal of Watershed Management Sciences and Engineering*, 7 (23), 43-52. <https://jwmsei.ir/article-1-280-fa.html>
  56. Saber Chenari, K., Abghari, H., Erfanian, M. and Gholizadeh, S. 2013 Short-term model of optimization operation of water resources using Particle SWARM optimization and compared with genetic algorithm. *Journal of Watershed Management Researches*, 25 (4), 63-72.
  57. Erfanian, M., Kazempour, S. and Heidari, H. 2013 Evaluation and calibration of TRMM satellite rainfall data in arid and semi-arid regions of Iran. *Geography: Regional Planning*, 3 (3), 83-95. <http://www.jgeoqeshm.ir/>

58. Erfanian, M. and Babaei Hesar, S. 2013 **Evaluation of hybrid model for estimating daily solar radiation in some solar sites of Iran.** *Journal of Water and Soil*, 27 (1), 158-168. <https://dx.doi.org/10.22067/jsw.v0i0.22224>
59. Rahiminasab, A.A., Abghari, H., Erfanian, M. and Nadiri, A. 2012 **Analysis and investigation of landslide hazard zoning using hybrid model of hierarchical analysis and surface density.** *Journal of Environmental Erosion Research*, 2 (1), 1-11. <http://dorl.net/dor/20.1001.1.22517812.1391.2.1.1.6>

- **National Conference Presentation in Persian (Not listed on my google scholar profile)**

1. Dadafarid, S., Erfanian, M., and Miryaghoobzadeh, M.H. 2022 **Hydrological monitoring of the Urmia Lake basin based on the analysis of satellite data from GRACE, MODIS, and SMAP in Google Earth Engine.** *The 5th National Conference on Watershed Management Science and Engineering of Iran*, Soil Conservation and Watershed Management Research Institute (SCWMRI), 17-16 May, Tehran, Iran
2. Ashrafi, B., Erfanian, M., and Javan, K. 2022 **Estimation of consecutive dry and wet periods at Tabriz station using CORDEX project Projections.** *The 5th National Conference on Watershed Management Science and Engineering of Iran*, Soil Conservation and Watershed Management Research Institute (SCWMRI), 17-16 May, Tehran, Iran
3. Rajabi Oghulbeik, S., Erfanian, M., and Javan, K. 2022 **Projecting the climatic parameters of temperature and precipitation at Urmia station using LARS-WG downscaling model.** *The 5th National Conference on Watershed Management Science and Engineering of Iran*, Soil Conservation and Watershed Management Research Institute (SCWMRI), 17-16 May, Tehran, Iran
4. Mazlum, S., Miryaghoobzadeh, M.H., Erfanian, M., and Hosseinzadeh, O. 2022 **Prioritizing sub-basins based on flood susceptibility in Barandoozchai watershed.** *The 4th Iranian National Hydrology Conference*, Shahrekord University, 13-14 Sep., Shahrekord, Iran
5. Vaziri, S., Miryaghoobzadeh, M.H., Erfanian, M., and Javan, K. 2022 **Forecasting of maximum temperature at Mahabad station based on CMIP6 models.** *The 4th Iranian National Hydrology Conference*, Shahrekord University, 13-14 Sep., Shahrekord, Iran
6. Hamzehnejad, S., Miryaghobzadeh, M.H., and Erfanian., M. 2019. **Review of mathematical modeling of water quality and WASP model.** *The 14th National Conference on Watershed Management Sciences and Engineering*, 16-17 July, Urmia University, Urmia, Iran
7. Davarpanah, S., Erfanian, M., and Javan, K. 2019. **Drought probability prediction using SPI and Markov chain model at Urmia station.** *The 14th National Conference on Watershed Management Sciences and Engineering*, 16-17 July, Urmia University, Urmia, Iran



8. Mirzaei, A., Abghari, H., Choobeh, S., and Erfanian, M. 2019. **The effect of time period on trend analysis of climate parameters.** *The 14th National Conference on Watershed Management Sciences and Engineering*, 16-17 July, Urmia University, Urmia, Iran
9. Mirzaei, A., Abghari, H., and Erfanian, M. 2019. **Drought trend analysis at synoptic stations in the Lake Urmia Basin.** *The 14th National Conference on Watershed Management Sciences and Engineering*, 16-17 July, Urmia University, Urmia, Iran
10. Mirzaei, A., Abghari, H., and Erfanian, M. 2019. **Annual and seasonal variability of precipitation at at synoptic stations in the Lake Urmia basin.** *The 3rd National Conference on the Hydrology of Semi-Arid Regions*, 23-24 April, University of Kurdistan, Sanandaj, Iran
11. Mirzaei, A., Abghari, H., and Erfanian, M. 2019. **Wavelet theory and multilayer perceptron to forecast meteorological drought index.** *The 3rd National Conference on the Hydrology of Semi-Arid Regions*, 23-24 April, University of Kurdistan, Sanandaj, Iran
12. Mirzayi Hassanlo, A., Abghari, H., and Erfanian, M. 2018 **Spatial and temporal distribution of daily rainfall concentration index (CI) in the Urmia Lake basin.** *The 13th National Conference of Watershed Science and Engineering of Iran*, University of Mohaghegh Ardabili, 2-3 Oct., Ardabil, Iran
13. Mirzaei, A., Abghari, H., and Erfanian, M. 2018. **Meteorological drought analysis at Urmia synoptic station based on SPI and SPEI.** *The 13th National Conference on Watershed Management Sciences and Engineering*, 2-3 October, University of Mohaghegh Ardabili, Ardabil, Iran
14. Saffarinia, S., Abghari, H., and Erfanian, M. 2018. **Groundwater homogeneous zones identification in water quality using factorial and cluster analyses in the downstream of Mahabad city.** *The 13th National Conference on Watershed Management Sciences and Engineering*, 2-3 October, University of Mohaghegh Ardabili, Ardabil, Iran
15. Saffarinia, S., Abghari, H., and Erfanian, M. 2018. **Surface water quality assessment in upstream and downstream of Mahabad reservoir dam using multivariate statistical techniques.** *The 13th National Conference on Watershed Management Sciences and Engineering*, 2-3 October, University of Mohaghegh Ardabili, Ardabil, Iran
16. Rahimi Bayati, Z., Erfanian, M., Javan, K., and Babaei Hesar, S. 2018 **Severity-duration analysis based on Capula functions at Tabriz synoptic station.** *The 2nd National Conference on Climatology of Iran*, 9 May, Ferdowsi University of Mashhad, Mashahd, Iran
17. Rahimi Bayati, Z., Erfanian, M., Javan, K., and Babaei Hesar, S. 2017 **Severity-duration analysis based on Bayes' theorem at Sarab synoptic station.** *The 12th National Conference on*

*Watershed Management Sciences and Engineering*, 11-12 October, Malayer University, Malayer, Iran

18. Omarzadeh, B., Erfanian, M., Zeinivand, H., and Miryaghobzadeh, M.H. **2018 Assessing climate change impacts on flow duration indices in Lighvanchai watershed using wetSpa model.** *The 8th National Scientific-Research Conference on Watershed Management, and Soil and Water Resources Management*, 17-18 February, Shahid Bahonar University of Kerman, Kerman, Iran
19. Erfanian, M., Babaei Hessar, S., and Hosseinkhah, M. **2016 Climate change impact on groundwater level in the Urmia pain aquifer.** *International Conference on Geographic and Environmental Impacts of Urmia Lake Conditions*, 23-24 November, University of Tabriz, Tabriz, Iran
20. Erfanian, M., Ghaebi, N., and Babaei Hessar, S. **2016 Frequency distribution analysis of hydrologic drought index (SDI) by L-moments approach at some synoptic stations in the eastern part of the Urmia Lake.** *International Conference on Geographic and Environmental Impacts of Urmia Lake Conditions*, 23-24 November, University of Tabriz, Tabriz, Iran
21. Erfanian, M., Naderi, S., and Gholampour, Z. **2016 Precipitation extremes analysis in the Lake Urmia basin.** *International Conference on Geographic and Environmental Impacts of Urmia Lake Conditions*, 23-24 November, University of Tabriz, Tabriz, Iran
22. Erfanian, M., and Javan, K. **2016 Evaluation and calibration of satellite precipitation data (TRMM-B42 V6) in the Lake Urmia basin.** *International Conference on Geographic and Environmental Impacts of Urmia Lake Conditions*, 23-24 November, University of Tabriz, Tabriz, Iran
23. Erfanian, M., and Javan, K. **2016 Predicting groundwater pollution vulnerability using GIS-based DRASTIC model in Naghadeh-Oshnavieh plain.** *First International Conference of Iranian Natural Hazards and Environmental Crises, Strategies and Challenges*, 13 September, Ardabil, Iran
24. Erfanian, M., Najafzadeh, A., Alijanpour, A., and Babaei Hessar, S. **2016 Evaluation of GNSPI geostatistical method for filling gaps in ETM+ image in Khoy region.** *4<sup>th</sup> National Conference of Sustainable Development in Geographical Sciences, Planning, Architecture and Urbanism*, 5 July, Tehran, Iran
25. Khezri Dashkasan, S.S., Alijanpour, A., Hosseinzadeh, O. and Erfanian, M. **2016 Determination of environmental and social-economic criteria for forest parks development.** *2<sup>nd</sup> International Conference of New Ideas in Agriculture, Environment and Tourism*, 31 May, Ardabil, Iran

26. Narimani, R., Erfanian, M., Nazarnejad, H., and Mahmoudzadeh, M. **2016 Evaluating land use change impact on runoff and sediment in Lighvanchai watershed using GeoWEPP tool.** *Water Sciences and Engineering Conference*, 8-9 June, Shahid Beheshti Conference Center, Tehran, Iran
27. Ghobadi, S., Abghari, H., and Erfanian, M. **2016 Validating precipitation and streamflow volume data in the west of the Lake Urmia.** *2<sup>nd</sup> International Congress on Earth Sciences and Urban Development*, 3 March, Tabriz, Iran
28. Alibeygy, T., Sour, M., Erfanian, M., and Motamedi, J. **2016 Identification of suitable regions for reducing wind erosion in rangelands using remote sensing-based indices.** *7<sup>th</sup> National Scientific-Research Conference on Watershed Management, and Soil and Water Resources Management*, 16 February, Shahid Bahonar University of Kerman, Kerman, Iran
29. Erfanian, M., Ebadi Nahari, Z., and Kazempour Choursi, S. J. **2015 Comprehensive drought monitoring in the Lake Urmia basin using remote sensing data.** *First Scientific-Research Congress of Promotion and Development of Agriculture, Natural Resources, and Environment Sciences in Iran*, 19-20 September, Tehran, Iran
30. Erfanian, M., Ghaebi, N., and Babaei Hesar, S. **2015 Fitting the best statistical distribution on SPI drought index using L-moments approach at some synoptic stations in the Urmia Lake basin.** *First Scientific-Research Congress of Promotion and Development of Agriculture, Natural Resources, and Environment Sciences in Iran*, 19-20 September, Tehran, Iran
31. Erfanian, M., Hatami Jarabad, C., and Babaei Hesar, S. **2015 Estimation of daily net radiation based on digital elevation model and MODIS sensor products in Ajichai watershed.** *First Scientific-Research Congress of Promotion and Development of Agriculture, Natural Resources, and Environment Sciences in Iran*, 19-20 September, Tehran, Iran
32. Erfanian, M., Raheli Namin, N., and Babaei Hesar, S. **2015 Evaluation of four reference evapotranspiration estimation models in the Urmia Lake basin to select the best climatic model.** *First Scientific-Research Congress of Promotion and Development of Agriculture, Natural Resources, and Environment Sciences in Iran*, 19-20 September, Tehran, Iran
33. Eilati, A., Erfanian, M., and Mirzaei, S. **2015 Prioritization of sub-watersheds based on analysis and combination of morphometric parameters using RS and GIS in Balekhlichai watershed, Ardabil.** *First Scientific-Research Congress of Promotion and Development of Agriculture, Natural Resources, and Environment Sciences in Iran*, 19-20 September, Tehran, Iran
34. Eilati, A., Erfanian, M., and Mirzaei, S. **2015 Correlation matrix analysis of morphometric parameters using RS and GIS in Balekhlichai watershed, Ardabil.** *First Scientific-Research Congress of Promotion and Development of Agriculture, Natural Resources, and Environment Sciences in Iran*, 19-20 September, Tehran, Iran

35. Salmalian, M., Mousavi Mirkala, S.R., Erfanian, M., and Hosseinzadeh, O. **2016 Application of Delphi and TOPSIS techniques for determination and prioritization of effective criteria to design forest roads.** *2<sup>nd</sup> National Conference on Conservation of Natural Resources and Environment*, 2-3 March, University of Mohaghegh Ardabili, Ardabil, Iran
36. Salmalian, M., Mousavi Mirkala, S.R., Erfanian, M., and Hosseinzadeh, O. **2016 Application of Geographic Information System (GIS) for designing forest roads in mountainous regions.** *2<sup>nd</sup> National Conference on Conservation of Natural Resources and Environment*, 2-3 March, University of Mohaghegh Ardabili, Ardabil, Iran
37. Bayazi, M., and Erfanian, M. **2014 Sensitivity analysis of SWAT model in Nazluchai watershed using MOGSA algorithm.** *32<sup>nd</sup> National and 1st International Geosciences Congress: The Urmia Lake Rescue*, 17-18 February, Urmia University, Urmia, Iran
38. Abedi, Z., and Erfanian, M. **2014 Assessing climate change impact on temperature and precipitation during 2046-2065 period using LARS-WG model at Hervichai watershed, East Azarbaijan Province.** *First Iranian Congress on Soil and Water Engineering and Management*, May, University of Tehran, Tehran
39. Erfanian, M., Darvishpour, E., and Abghari, H. **2013 Snowcover estimation by combining Terra and Aqua satellite data in West Azarbaijan Province,** *First National Conference on Climatology of Iran*, 21-22 May, Kerman Graduate University of Technology, Kerman, Iran
40. Beygi Heidarlu, H., Banj Shafiei, A. and Erfanian, M. **2013 Snowcover estimation by combining Terra-Aqua satellite data in West Azarbaijan Province,** *First National Conference on Climatology of Iran*, 21-22 May, Kerman Graduate University of Technology, Kerman, Iran
41. Beygi Heidarlu, H., Banj Shafiei, A. and Erfanian, M. **2013 The most important environmental and physiographic factors affecting forests fire in Sardasht.** *First National Conference on solutions to access Sustainable Development in Agriculture, Natural Resources and the Environment*, March, Tehran, Iran
42. Erfanian, M., and Babaei Hessar, S. **2012 Development of PMF56-Hybrid model to estimate reference evapotranspiration (Case study: Tabriz synoptic station).** *3<sup>rd</sup> National Conference on Comprehensive Soil and Water Resources Management*, 10 September, Sari Agricultural Sciences and Natural Resources University, Sari, Iran
43. Erfanian, M., Zamininejad, Z., and Abghari, H. **2012 Application of MODIS-based vegetation indices to estimate annual runoff depth in the Urmia Lake basin.** *3<sup>rd</sup> National Conference on Comprehensive Soil and Water Resources Management*, 10 September, Sari Agricultural Sciences and Natural Resources University, Sari, Iran

44. Erfanian, M., Vafaei, N., and Rezaianzadeh, M. **2012 Mapping drought risk for Fars Province by combining NDVI anomaly and meteorological drought index (SPI)**. *3<sup>rd</sup> National Conference on Comprehensive Soil and Water Resources Management*, 10 September, Sari Agricultural Sciences and Natural Resources University, Sari, Iran
45. Erfanian, M., Babaei Hesar, S., and Ghanbarlu, Z. **2012 Evaluation of TRMM satellite data and different geo-statistical methods for mapping annual mean precipitation in the Lake Urmia basin**. *3<sup>rd</sup> National Conference on Comprehensive Soil and Water Resources Management*, 10 September, Sari Agricultural Sciences and Natural Resources University, Sari, Iran
46. Erfanian, M., Zohrabi Sayfabad, V., Arabkhedri, M., and Bayazi, M. **2012 Monthly streamflow simulation by SWAT model at Jajrood river, upstream of Latyan dam**. *8<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 16-17 May, Lorestan University, Khorramabad, Iran
47. Erfanian, M., Ghahramani Saatlu, P., and Saadat, H. **2012 Development of a fuzzy model for mapping Soil Protection Index (SPI) using satellite data in Gharnaveh watershed, Golestan Province**. *8<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 16-17 May, Lorestan University, Khorramabad, Iran
48. Saber Chenari, K., Abghari, H., and Erfanian, M. **2012 Water release management in reservoir dams using particle swarm optimization algorithm**. *8<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 16-17 May, Lorestan University, Khorramabad, Iran
49. Erfanian, M., and Babaei Hesar, S. **2012 Evaluating a hybrid model for solar radiation estimation and generating seasonal radiation maps in the Urmia Lake Basin**. *5<sup>th</sup> International Congress of the Islamic World Geographers*, **Best Oral Presentation Award**, 9-10 October, Tabriz University, Tabriz, Iran
50. Erfanian, M., and Babaei Hesar, S. **2011 Evaluating a hybrid model for estimating daily solar radiation at Tabriz synoptic station**. *1st National Conference on Agrometeorology and Agricultural Water Management*, 22 November, University of Tehran, Tehran, Iran
51. Fatollai, A., Saber Chenari, K., Erfanian, M., and Abghari, H. **2011 Monthly streamflow simulation by SWAT model at Jajrood river, upstream of Latyan dam**. *7<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 27-28 April, Isfahan University of Technology, Isfahan, Iran
52. Fatollai, A., Saber Chenari, K., Erfanian, M., and Abghari, H. **2011 Drought severity zonation using variogram and trend analysis in geo-statistical methods**. *7<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 27-28 April, Isfahan University of Technology, Isfahan, Iran



53. Fatollahi, A., and Erfanian, M. 2011 **Applying GIS and RS for streamflow routing to estimate surface runoff volume by Curve Number method.** *7<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 27-28 April, Isfahan University of Technology, Isfahan, Iran
54. Bayazi, M., and Erfanian, M. 2011 **Evaluation of rating curve methods for suspended load estimation in East Azarbaijan rivers.** *7<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 27-28 April, Isfahan University of Technology, Isfahan, Iran
55. Abghari, H., Rahiminasab, A.A., Erfanian, M., and Nadiri, A. 2011 **Identifying effecting factors for landslide mapping by statistical methods.** *7<sup>th</sup> National Conference on Watershed Management Sciences and Engineering*, 27-28 April, Isfahan University of Technology, Isfahan, Iran

- **Dissertation Supervision (Ph.D.)**

1. **Mirzaei Hassanlu, A.** Comprehensive analysis of precipitation and extreme indices variability, and its association with driving teleconnection patterns over Iran based on entropy indices, wavelet coherence, and bivariate copulas, Urmia University, Faculty of Natural Resources Approved **July 2023**, Ongoing, (**Supervisor**)
2. **Dadafarid, S.** Hydrological drought analysis and groundwater modeling under climate change conditions in the Urmia Aquifer. Urmia University, Faculty of Natural Resources Approved **July 2023**, Ongoing, (**Supervisor**)
3. **Karimi, S.** Salmas subsidence vulnerability and presentation of prevention management scenarios using groundwater distribution model. Urmia University, Faculty of Agriculture, Approved **March 2023**, Ongoing, (**Co-Supervisor**)
4. **Eishoei, E.** Salmas Soil moisture remotely sensed data assimilation in SWAT model, Uncertainty analysis and assessment of error reduction in modeling with Ensemble Kalman Filter (EnKF). Urmia University, Faculty of Natural Resources, Approved **July 2022**, Ongoing, (**Co-Supervisor**)
5. **Najafzadeh, A.** Temporal and spatial analysis of land subsidence rate and its relationship with changes in groundwater level and land geopotential changes from GRACE satellite imagery in Lake Urmia Basin using radar interferometry techniques and machine learning algorithm. Urmia University, Faculty of Natural Resources Approved **Feb. 2022**, Ongoing, (**Co-Supervisor**)
6. **Kazempour Choursi, S.,** Meteorological drought estimation models using remotely-sensed data based on machine learning algorithms in the Lake Urmia basin, Urmia University, Faculty of Natural Resources Approved **Feb. 2022**, Ongoing, (**Supervisor**)
7. **Ghahramani Saatlu, P.,** A combination of frameworks to determine groundwater recharge potential and subsidence vulnerability (ALPRIFT) in the Urmia plain aquifer based on fuzzy

decision-making and the WetSpa model, Urmia University, Faculty of Natural Resources Approved **Feb. 2022**, Ongoing, (**Supervisor**)

8. **Choobeh, S.**, Investigation and analysis of temperature and precipitation variability and relationship with teleconnection patterns in synoptic stations in Iran, Urmia University, Faculty of Natural Resources, Approved **2021**, Ongoing, (**Co-Supervisor**)
9. **Hessami, S. D.** Estimation and evaluation of land use change impacts on the intensity of future soil erosion based on Markov chain and RUSLE 3D model, Urmia University, Faculty of Natural Resources, Approved **2020**, Ongoing, (**Co-Supervisor**)
10. **Beygi Heidarlu, H.**, Long-term trajectory of disturbance and recovery in the northern zagros forests under various polices using Landsat time series, Northwest Iran. Defensed, **2018**, Urmia University, Faculty of Natural Resources, (**Co-Supervisor**)
11. **Babaei Hesar, S.**, Feasibility of using urban runoff in order to recharge groundwater (A case study in Urmia city, Iran). Defensed, Kashan University, Faculty of Natural Resources and Earth Sciences, (**Advisor**)
12. **Kazemikia, S.**, Identification of representative watersheds in Iran based on representative watershed index and multi-fractal analysis. Defensed, Tarbiat Modares University, Faculty of Natural Resources, (**Advisor**)
13. **Javan, K.**, Comparative evaluation of satellite data and ground observations for rainfall estimation in the Urmia Lake Basin. Defensed, **2014**, University of Tabriz, Faculty of Georaphy, (**Advisor**)

#### • **Thesis Supervision (Master)**

1. **Amiri Ashayeri, A.**, Prioritizing flood potential of subwatersheds based on morphometric parameters and indices (Nazluchai, Rozehchai and Shahrchai). Urmia University, Faculty of Natural Resources, Approved on **June 12 2023**. On-going (**Supervisor**)
2. **Daloohi, A.M.H.**, Trend analysis of extreme precipitation and temperature indices in Wasit Province (Hor al-Shuijah), Iraq. Urmia University, Faculty of Natural Resources, Approved on **March 14 2023**. On-going (**Co-Supervisor**)
3. **Rajabi Oghulbeik, S.**, Trend analysis of reference crop evapotranspiration (ET<sub>0</sub>) in the Urmia Urmia Lake Basin under climate change. Defended **on 20 Sep. 2022**, Urmia University, Faculty of Natural Resources, p.125 (**Supervisor**)
4. **Amiri, A.**, Relationship between land use-land cover and seasonal river water quality in Qarahsoo watershed, Ardabil Province. Defended **on 5 Feb 2022**, Urmia University, Faculty of Natural Resources, p.100 (**Supervisor**)
5. **Ashrafi, B.**, Evaluation and projections of extreme precipitation indices in the Lake Urmia Basin by CORDEX project data. Defended **on 5 Feb. 2022**, Urmia University, Faculty of Natural Resources, p.114 (**Supervisor**)

6. **Mihan Doust, B.**, Drought severity assesment using satellite data of TRMM, MODIS and GRACE in the Lake Urmia Basin. Defended on **19 Feb. 2020**, Urmia University, Faculty of Natural Resources, p.103 ([Supervisor](#))
7. **Davarpanah, S.**, Assessing climate change impacts on wet and dry spells characteristics in Lake Urmia Basin. Defended on **19 Feb. 2020**, Urmia University, Faculty of Natural Resources, p. 101 ([Supervisor](#))
8. **Azimi, S.**, Simulation of combined impacts of future land use/land cover and climate changes on river flow based on the SWAT and CLUE-S models, and remotely sensed data. **2021**, Urmia University, Faculty of Natural Resources, ([Co-Supervisor](#))
9. **Hamzehnejad, S.**, Evaluation of QUAL2K and WASP models in water pollution allocation in Shahrchay Basin. **2018**, Urmia University, Faculty of Natural Resources, ([Co-Supervisor](#))
10. **Mahmoudi, M.**, Water quality assessment of surface and ground water resources in Naghadeh-Oshnavieh plain. **2018**, Urmia University, Faculty of Natural Resources, ([Supervisor](#))
11. **Rahimi Bayati, Z.**, Meteorological drought severity-duration-frequency analysis based on Bayesian theory at synoptic stations in the Lake Urmia Basin. **2018**, Urmia University, Faculty of Natural Resources, p. 101. ([Supervisor](#))
12. **Padir, M.K.**, Hydrologic drought analysis based on the standardized runoff index (SRI) and bivariate copula functions in the Heravichai watershed, Northwest Iran. **2018**, Urmia University, Faculty of Natural Resources, p. 60. ([Supervisor](#))
13. **Omarzadeh, B.**, Assessing climate change impacts on flow duration curve characteristics using WetSpa hydrological model in the Hervichai watershed, Northwest Iran. **2018**, Urmia University, Faculty of Natural Resources , p. 101. ([Supervisor](#))
14. **Salimi, S.**, Estimation of woody species richness and diversity using Landsat 8 imagery in the Arasbaran forests, Iran. **2017**, Urmia University, Faculty of Natural Resources, p. 78. ([Co-Supervisor](#)).
15. **Mirzapour, S.**, Land surface temperature retrieval of Landsat 8 TIRS data using split-window algorithm and brightness temperature correction in Tabriz county, Northwest Iran. **2017**, Urmia University, Faculty of Natural Resources, p. 72. ([Supervisor](#))
16. **Feizy, B.**, Investigation on temporal and spatial changes in macrophytes in the Zarivar lake of Kurdistan Province, Iran. **2017**, Urmia University, Faculty of Natural Resources, p. 151. ([Co-Supervisor](#))
17. **Amiri, T.**, Multi-criteria decision making methods of AHP and ANP applied to location detection of forest fires towers and fire fighting stations in Sardasht forests, Northwest Iran. **2017**, Urmia University, Faculty of Natural Resources, p. 88. ([Co-Supervisor](#))
18. **Agahi, E.**, Determining the lithologic units contribution of Kahriz watershed in aeolian deposit formation of Jabal Kandi region, Northwest Iran. **2017**, Urmia University, Faculty of Natural Resources, p. 82. ([Co-Supervisor](#))

19. **Salmalian, M.**, Planning of forest roads network with TOPSIS method based on GIS in Abbas Abad forests, Mazandaran Province, Northern Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 95. [\(Co-Supervisor\)](#)
20. **Raheli Namin, N.**, Evaluation and comparison of support vector machine, statistical and climatic models for estimating monthly reference evapotranspiration at Tabriz and Urmia synoptic stations, Northwest Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 77. [\(Supervisor\)](#)
21. **Najafzadeh, A.**, Evaluation and comparison of data gap-filling methods for ETM+ SCL-Off imagery for land use mapping in Khoy region, Northwest Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 107. [\(Supervisor\)](#)
22. **Mahmoudi, S.**, Risk assessment of groundwater pollution in Naghadeh-Oshnavieh plain based on the Shannon entropy model and Dempster-Shafer theory, Northwest Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 67. [\(Supervisor\)](#)
23. **Khezri Dashkasan, S.S.**, Forest park site selection with multi-criteria decision approach in Shohada Valley of Urmia, Northwest Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 83. [\(Co-Supervisor\)](#)
24. **Ghobadi, S.**, Monitoring of meteorological drought and changes in groundwater level and discharge in the west of Urmia Lake, Northwest Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 86. [\(Co-Supervisor\)](#)
25. **Ghaebi, N.**, Regional frequency analysis of meteorological and hydrologic drought indices in the Urmia Lake Basin, Northwest Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 148. [\(Supervisor\)](#)
26. **Eilati, A.**, The management prioritization of sub-watersheds by applying weighted sum analysis approach on morphometric parameters, Balekhlichai river, Ardebil Province, NW Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 75. [\(Supervisor\)](#)
27. **Amini, G.**, The combined application of value engineering and prioritizing sub-watersheds to adopt the best management practices in Sekani watershed, Northwest Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 69. [\(Co-Supervisor\)](#)
28. **Alibegy, T.**, Providing an enhanced indicator to estimate grassland production based on NDVI and GPP products of MODIS in Razin region, Kermanshah Province, Western Iran. **2016**, Urmia University, Faculty of Natural Resources, p. 89. [\(Co-Supervisor\)](#)
29. **Narimani, R.**, Modeling the impacts of land use change on runoff and sediment yield with GeoWEPP in Lighvanchai watershed, East Azarbaijan Province, Northwest Iran. **2015**, Urmia University, Faculty of Natural Resources, p. 96. [\(Supervisor\)](#)
30. **Heidari, V.**, Developing a simple remote sensing based evapotranspiration model and its evaluation in the Urmia Lake Basin, Northwest Iran. **2015**, Urmia University, Faculty of Natural Resources, p. 116. [\(Supervisor\)](#)

31. **Hatami Jarabad, C.**, Estimating daily net radiation based on digital elevation model and temperature products of MODIS in the Urmia Lake Basin, Iran. **2015**, Urmia University, Faculty of Natural Resources, p. 83. ([Supervisor](#))
32. **Ebadi Nahari, Z.**, Comprehensive drought monitoring by integrating the MODIS and TRMM data in the Lake Urmia Basin. 2015, Urmia University, Faculty of Natural Resources, p. 112. ([Supervisor](#))
33. **Derakhshani, G.**, The correction of meteorological drought SPI and RDI indices by fitting the best statistical distribution and applying Equi-Probability Transformation Function (EPTF) at synoptic stations in the Urmia Lake Urmia, NW Iran. **2015**, Urmia University, Faculty of Natural Resources, p. 152. ([Supervisor](#))
34. **Abedi, Z.**, Assessment of future climate change impacts on monthly stream discharge in Hervichai watershed using SWAT model, East Azarbaijan Province, Northwest Iran. **2015**, Urmia University, Faculty of Natural Resources, ([Supervisor](#))
35. **Kaviani, O.**, Application and comparison of PROMETHEE II and ELECTRE III outranking methods to identify and prioritize critical areas in Dinevar watershed, Kermanshah Province, Western Iran. **2014**, Urmia University, Faculty of Natural Resources, p. 149. ([Supervisor](#))
36. **Rezaei Livari, V.**, Application of remote sensing and geographic information system in temporal changes of badland quantitative characteristics at Zenouz watershed, Northwest Iran. **2013**, Tarbiat Modares University: Faculty of Natural Resources, p. 104. ([Advisor](#))
37. **Hosseinkhah, M.**, Modeling land use impacts on water quality parameters using OLS and GWR multi-variate regression methods at some wastersheds in Fars province, southern Iran. **2013**, Urmia University, Faculty of Natural Resources, p. 92. ([Supervisor](#))
38. **Farajollahi, H.**, The efficiency of weight of evidence, logistic regression and frequency ratio methods for mapping groundwater spring potential in Chelgazi watershed, Kurdistan Province, Iran. **2013**, Urmia University, Faculty of Natural Resources, p. 93. ([Supervisor](#))
39. **Darvishpour, E.**, Improving snowmelt runoff simulation using SRM model by combining MODIS and AMSR-E satellite data for snowcover mapping in Mahabad Dam watershed, Northwest Iran. **2013**, Urmia University, Faculty of Natural Resources, p. 84. ([Supervisor](#))
40. **Beygi Heidarlu, H.**, Forest fire mapping using fuzzy logic and analytical hierachy process (AHP) in Sardasht forests, West Azarbaijan, Iran. **2013**, Urmia University, Faculty of Natural Resources, p. 132. ([Supervisor](#))
41. **Zohrabi Seyf-Abad, V.**, Investigating the spatio-temporal changes of vegetation on runff and sediment yield using SWAT model and MODIS data in Latyan Dam watershed, Tehran Province, Iran. **2012**, Urmia University, Faculty of Natural Resources, p. 96. ([Supervisor](#))
42. **Vafaei, N.**, Drought risk assessment using MODIS and TRMM satellite data and GIS in Fars Province, Southern Iran. **2012**, Urmia University, Faculty of Natural Resources, p. 95. ([Supervisor](#))



43. **Ghahramani, P.**, Risk assessemnt of soil erosion based on fuzzy logic using GIS and remote sensing data in Garnaveh watershedm of Golestan province, Iran. **2012**, Urmia University, Faculty of Natural Resources, p. 132. (**Supervisor**)
44. **Babaei Hessar, S.**, Evaluation of hybrid model in estimating solar radiation in different climate conditions of Iran. **2012**, Urmia University, Faculty of Natural Resources, p. 98. (**Supervisor**)
45. **Zamininejad Asl, Z.**, The utility of MODIS vegetation metrics to estimate hydrological response variables (HRVs) at some watersheds in the Urmia Lake Basin. **2011**, Urmia University, Faculty of Natural Resources, p. 101. (**Supervisor**)
46. **Yousefi Mobarhan, E.**, Application of HMS-SMA model for runoff depth and volume simulation at different time scales in Zolachai watershed, Northwest Iran. 2011, Urmia University, Faculty of Natural Resources, p. 120. (**Co-Supervisor**)
47. **Saber Chenari, S.**, Application of particle swarm optimization (PSO) algorithm in Mahabad reservoir dam management, Northwest Iran. **2011**, Urmia University, Faculty of Natural Resources, p. 102. (**Co-Supervisor**)
48. **Rahiminasab, A.A.**, Landslide risk zoning using fuzzy logic and geographic information system in Ziarat watershed of Golestan province, Iran. **2011**, Urmia University, Faculty of Natural Resources, p. 104. (**Co-Supervisor**)
49. **Kargarian, S.**, Evaluation of long-term variations in monthly and seasonal water balance model in Nazloochoi watershed, Northwest Iran. **2011**, Urmia University, Faculty of Natural Resources, p. 91. (**Co-Supervisor**)
50. **Fatollahi, A.**, Using MODIS data to estimate evapotranspiration based on surface energy balance for land (SEBAL) in the northwestern Iran. **2011**, Urmia University, Faculty of Natural Resources, p. 95. (**Supervisor**)
51. **Bayazi, M.**, An evaluation of sediment rating curve methods for estimating suspended sediment concentrations in the Northwest rivers of Iran. **2011**, Urmia University, Faculty of Natural Resources, p. 105. (**Supervisor**)

## • Research Projects:

1. **Erfanian, M.**, Alijanpour, A., Babaei, S., and Najafzadeh, A., *Evaluation and comparsion of data gap-filling methods for ETM+ SCL-Off imagery for land use mapping in Khoy region, Northwest Iran.* **2016**, Urmia University, Depeuty of Research, Project No. 95-M-1 (**Principal Investigator**)
2. **Erfanian, M.**, Babaei, S., and Ghaebi, N., *Regional frequency analysis of meteorological and hydrologic drought indices in the Urmia Lake Basin, Northwest Iran.* **2016**, Urmia University, Depeuty of Research, Project No. 94-M-3 (**Principal Investigator**)
3. **Erfanian, M.**, Kazempour, S., and Ebadi Nahari, Z., *Comprehensive drought monitoring by integrating the MODIS and TRMM data in the Urmia Lake Basin.* **2015**, Urmia University, Depeuty of Research, Project No. 94-M-2 (**Principal Investigator**)

4. Erfanian, M., Babaei, S., and Hatami Jarabad, C., *Estimating daily net radiation based on digital elevation model and temperature products of MODIS in the Urmia Lake Basin, Iran.* **2015**, Urmia University, Deputy of Research, Project No. 94-M-1 (**Principal Investigator**)
5. Souri, M., Erfanian, M., Motamedi, J., and Alibeigi, T., *Providing an enhanced indicator to estimate grassland production based on NDVI and GPP products of MODIS in Razin region, Kermanshah Province, Western Iran.* **2016**, Urmia University, Deputy of Research, Project No. 94-M-10 (**Co-Investigator**)
6. Mousavi-Mirkala, S.R., Erfanian, M., Hosseinzadeh, O., and Salmalian, M., *Planning of forest roads network with TOPSIS method based on GIS in Abbas Abad forests, Mazandaran Province, Northern Iran.* **2016**, Urmia University, Deputy of Research, Project No. 94-M-6 (**Co-Investigator**)
7. Erfanian, M., Investigation on extrapolation methods to suspended load estimation in rivers of the West Azarbaijan provinve, **2011**, Urmia University, Deputy of Research, Project No. 576-10, Funded by the West Azarbaijan Regional Water Authority (WZRWA) (**Principal Investigator**)

- **Peer Review for International Journals**

1. Quantification and analysis of water retention ecosystem service and its spatial autocorrelation in North west Iran. **Review date: July 29 2023**, *Environmental Monitoring and Assessment*, **IF = 3.307**
2. Inter-decadal variation of drought and influential factors in the north-south transitional zone of China. **Review date: Mar 28, 2023**, Manuscript: Hydrol50987, *Journal of Hydrology*, **IF = 6.4**
3. A novel model of the deep neural network approach in coal mining surface pattern to assess land use classification using remote sensing image. **Review date: Oct 2, 2022**, Manuscript: ESPR-D-22-14426. *Environmental Science and Pollution Research (ESPR)*, **IF= 5.8**
4. Drought characterization and severity analysis in Awash river basin applying GRACE-TWS and MODIS Datasets, **Review date: Sep 29, 2022**, Manuscript: JWC-D-22-00361, *Journal of Water and Climate Change (JWC)*, **IF= 2.8**
5. The impact of the satellite ground track shift on the accuracy of altimetric measurements on rivers: a case study of the Sentinel-3 altimetry on the Odra/Oder River. **Review date: Sep 17, 2022**, Manuscript: Hydrol46052, *Journal of Hydrology*, **IF= 6.4**
6. Pollution levels, sources and risk assessment of polycyclic aromatic hydrocarbons in farmland soil and crops near Urumqi Industrial Park, Xinjiang, China. **Review date: Aug 13, 2022**, Manuscript: SERR-D-22-00047R2, *Stochastic Environmental Research and Risk Assessment (SERR)*, **IF= 4.2**
7. Quantitative analysis of the human intervention impacts on hydrological drought in Zayandeh-Rud river basin, Iran. **Review date: Aug 1, 2022**, Manuscript: JWC-D-22-00188R1, *Journal of Water and Climate Change (JWC)*, **IF= 2.8**
8. Simulation of water and nitrogen movement mechanism in cold regions during freeze-thaw period based on a distributed non-point source pollution model closely coupled water, heat, and

- nitrogen processes at the watershed scale. **Review date: Jul 29, 2022**, Manuscript: ESPR-D-22-08084R1, *Environmental Science and Pollution Research* (ESPR), **IF= 5.8**
9. Simulation of water and nitrogen movement mechanism in cold regions during freeze-thaw period based on a distributed non-point source pollution model closely coupled water, heat, and nitrogen processes at the watershed scale. **Review date: Jul 1, 2022**, Manuscript: ESPR-D-22-08084, *Environmental Science and Pollution Research* (ESPR), **IF= 5.8**
  10. Quantitative analysis of the human intervention impacts on hydrological drought in a highly managed data-scarce basin, **Review date: Jun 30, 2022**, Manuscript: JWC-D-22-00188, *Journal of Water and Climate Change* (JWC), **IF= 2.8**
  11. Detecting hydrocarbon micro-seepage and related contamination, probable prospect areas, deduced from a comparative analysis of multispectral and hyperspectral satellite images. **Review date: Apr 24, 2022**, Manuscript: SERR-D-22-00236, *Stochastic Environmental Research and Risk Assessment* (SERR), **IF= 4.2**
  12. Spatial and temporal variation characteristics and frequency analysis of extreme precipitation from 1959 to 2017- A case study of Longtan Watershed, Southwest China. **Review date: Apr 14, 2022**, Manuscript: JWC-D-21-00454R1, *Journal of Water and Climate Change* (JWC), **IF= 2.8**
  13. Spatial and temporal variation characteristics and frequency analysis of extreme precipitation from 1959 to 2017- A case study of Longtan Watershed, Southwest China. **Review date: Mar 11, 2022**, Manuscript: JWC-D-21-00454, *Journal of Water and Climate Change* (JWC), **IF= 2.8**
  14. Evaluation of regional water use efficiency under green and sustainable development using an improved super-slack-based measure model. **Review date: Mar 11, 2022**, Manuscript: ESPR-D-22-03563, *Environmental Science and Pollution Research* (ESPR), **IF= 5.8**
  15. Pollution levels, sources and risk assessment of polycyclic aromatic hydrocarbons in farmland soil and crops near Urumqi Industrial Park, Xinjiang, China. **Review date: Feb 18, 2022**, Manuscript: SERR-D-22-00047, *Stochastic Environmental Research and Risk Assessment* (SERR), **IF= 4.2**
  16. A novel GIS-based approach to assessment suitable irrigation water using a fuzzy-multi indices method in Astaneh-Kuchesfahan plain, Iran. **Review date: Feb 2, 2022**, Manuscript: ENGE-D-21-01589R1, *Environmental Earth Sciences*, **IF= 2.8**
  17. Socioeconomic drought in family farming: implications and resilience of the Brazilian semi-arid rural population region hit by the 2012-2019 meteorological drought. **Review date: Dec 25, 2021**, Manuscript: STOTEN-D-21-28767, *Science of the Total Environment* (STOTEN), **IF= 9.8**
  18. Introducing a new framework for mapping subsidence vulnerability indices (SVIs): ALPRIFT, **Review date: Feb 3, 2018**, Manuscript: STOTEN-D-17-09009R1, *Science of the Total Environment* (STOTEN), **IF= 9.8**
  19. Representing a large region with few sites: The quality index approach for field studies. **Review date: Dec 22, 2017**, Manuscript: STOTEN-D-17-04783R1, *Science of the Total Environment* (STOTEN), **IF= 9.8**

20. Introducing the new ALPRIFT framework for mapping subsidence vulnerability indices (SVI). **Review date: Nov 30, 2017**, Manuscript: STOTEN-D-17-09009, *Science of the Total Environment* (STOTEN), **IF= 9.8**
21. Hydrological stream flow modelling for calibration and uncertainty analysis using the SWAT model in the Cameron Highlands Watershed. **Review date: Nov 16, 2017**, Manuscript: ESPR-D-17-03639, *Environmental Science and Pollution Research* (ESPR), **IF= 5.8**
22. Representing a large region with few sites: A new approach for watershed studies. **Review date: Jul 22, 2017**, Manuscript: STOTEN-D-17-04783, *Science of the Total Environment* (STOTEN), **IF= 9.8**
23. A global examination of the response of ecosystem water-use efficiency to drought based on MODIS data, **Review date: May 10, 2017**, Manuscript: STOTEN-D-16-06029R2, *Science of the Total Environment* (STOTEN), **IF= 9.8**
24. Land use optimization in Shiyang river basin based on MCR Model and ecological security pattern. **Review date: Apr 17, 2017**, Manuscript: ESPR-D-17-01620, *Environmental Science and Pollution Research* (ESPR), **IF= 5.8**
25. A global examination of the response of ecosystem water-use efficiency to drought based on MODIS data. **Review date: Apr 18, 2017**, Manuscript: STOTEN-D-16-06029R1, *Science of the Total Environment* (STOTEN), **IF= 9.8**
26. Identifying and quantifying geochemical and mixing processes in the Matanza-Riachuelo aquifer system, Argentina, **Review date: Apr 15, 2017**, Manuscript: STOTEN-D-17-00745, *Science of the Total Environment* (STOTEN), **IF= 9.8**

### Skills and Outstanding Works:

1. **Software Expertises:** ArcGIS, TerrSet, ENVI, SNAP, SPSS, SWAT, R and Python
2. **English Proficiency:** **Writing:** Advanced; **Reading:** Advanced; **Speaking:** Good; **Listenting:** Good
3. **Review for International Journals:** Journal of Hydrology, Science of the Total Environment (STOTEN), Environmental Science and Pollution Research, Environmental Earth Sciences, Water Resources Managemnt, Journal of Water and Climate Change, Environmental Science and Pollution Research, Stochastic Environmental Research and Assessment, Environmental Monitoring and Assessment.
4. **International Certificate:** Outstanding STOTEN Reviewer recognized by the ELSEVIER

### Personal Profile:

- **DOB and POB:** May 1972, Semnan, Iran, Persian (Farsi, Iranian)
- **Marital Status:** Married (Two children born in 2006 and 2017)
- **Home:** West Azarbaijan Province, Urmia, Iran

### Stay Abroad:

**Japan-Tokyo** Oct.2004-March 2008 (3.5 years)

**Canada-London** (Feb. 2019-July 2020, Six months)