

CURRICULUM VITAE

Seyed Jalil Alavi

Ph.D in Statistical (Numerical) Ecology

Department of Forestry
Faculty of Natural Resources
Tarbiat Modares University
P.O.Box 64414-356
Nour
Mazandaran
Iran

Personal details

Date of birth: 22 May 1978
Citizenship: Iranian
Marital Status: Married
Phone: +98-11-44553101(-3)
Fax: +98-11-44553499
Mobile: +98-9111580097
Email: sjalavi3@gmail.com & j.alavi@modares.ac.ir
URL: <http://www.modares.ac.ir/~j.alavi>

Education and Career

Since October 12/2013 – to date

Academic Staff, Associate Professor of Forestry, Faculty of Natural Resources, Tarbiat Modares University (TMU), IRAN.

September 23/2006- February 14/2011

Ph.D. student in Forestry at Faculty of Natural Resources, University of Tehran (Iran)

Concentration: Statistical Ecology

Title of PhD thesis: Quantitative autecology of beech tree (*Fagus orientalis* Lipsky) emphasizing on edaphic and landform factors in experimental and educational forest of Khayroud, Noshahr, Iran).

April 8/2010 - October 13/2010

Research Course at Katholieke Universiteit Leuven, Belgium under supervision of Prof. Dr. Bart Muys.

Concentration: Statistical Modeling using R Software

September 23/2001 – July 24/2004

M.Sc. student in Forestry at Faculty of Natural Resources, University of Tehran (Iran)

Concentration: Statistical Ecology

Title of M.Sc. thesis: Investigation on the spatial distribution of Wych elm (*Ulmus glabra*) in relation to edaphic and landform factors in experimental and educational forest of Khayroud, Noshahr, Iran).

September 19/2004 – December 25/2004

Training Course in Dept. of Ecology in Bjelovar Forest Company, Croatia.

September 23/1997 – September 22/2001

B.Sc. student in Forestry at Faculty of Natural Resources, University of Tehran (Iran).

Scientific Honors

Excellent student of M.Sc. course (2003)

First grade student of graduates (2004)

First grade in Ph.D. entrance exam (2005)

Excellent student of Ph.D. course (2006)

First grade student of graduates (2009)

To have Brilliant Talent by Science, Research and Technology Ministry

Areas of Specialization and Research Interests

I am statistical ecologist in Forestry, focusing on the relationships between performance of plant species and environmental variables using modern statistical modeling techniques. I have expertise in modelling climate change impacts on species, ecosystems and biodiversity. Several years ago I have fallen in love with R software, and although there have been quite a few moments of disappointment, we still maintain very good relationship and I always analyze the data with R software.

My main research interests are as follows:

- The combined effects of climate and land-use change on tree species distributions
- Predicting habitat suitability with machine learning models
- The ecological niche analysis of tree species
- Quantifying forest structure
- Assessing forest site productivity using statistical models
- Spatial modeling and Geostatistics

Courses Taught

M.Sc

Advanced Statistical Methods (for Forestry Students)

Advanced Biostatistics (for Environmental Sciences Students)

Simulation and Modeling in Forestry

Vegetation Mapping

Ph.D

Numerical Ecology

Proper Software in Forest Measurement (Focus on R Software)

Spatial Models in Forestry

Applied Softwares (for Wood Science)

Thesis Supervised (Ph.D.)

- **Hamid Taleshi**, Ph.D., Climate change impact on the distribution of four major tree species in central Hyrcanian Forests of Iran. (*Completed*)
- **Koroush Ahmadi**, Ph.D., Ecological Niche of endangered Yew Tree (*Taxus baccata* L.) and the Effect of Climate Change on its Distribution in Hyrcanian Forests (Northern Iran). (*Completed*)
- **Farzaneh Mogh'bel**, Ph.D., Determining the Suitability model for selecting the Tree species in the Hyrcanian Forests for Afforestation/Reforestation Programs. (*Ongoing*)
- **Sara Hedayati**, Ph.D., The combined effects of climate and land-use change on the future distribution of tree species in the Hyrcanian Forests (Northern Iran). (*Ongoing*)
- **Atefeh Mohammadi**, Ph.D., Spatial conservation prioritization for dominant tree species of Hyrcanian forest communities under climate change. (*Ongoing*)

Thesis Supervised (M.Sc.)

1. **Koroush Ahmadi**, M.Sc., Evaluating the site productivity of oriental beech (*Fagus Orientalis* Lipsky) in relation to edaphic and physiographic variables in research and educational forest of Tarbiat Modares University. (*Completed*)
2. **Ehsan Fakour**, M.Sc., Using data mining techniques (decision trees) for evaluating the productivity of oriental beech (*Fagus Orientalis* Lipsky) in relation to environmental variables in research and educational forest of Tarbiat Modares University. (*Completed*)
3. **Somayyeh Dehghaninezhad**, M.Sc., Predicting the performance measures of oriental beech (*Fagus Orientalis* lipsky) in relation to some environmental variables using Generalized Linear and Additive Models in research forest of Tarbiat Modares University. (*Completed*)
4. **Zahra Ahadi**, M.Sc., Investigation on the potential of regression kriging for mapping oriental beech forest site productivity in research forest of Tarbiat Modares University. (*Completed*)
5. **Vria Mardanpour**, M.Sc., Using different spatial modeling techniques for analyzing the relationship between the performance of oriental beech (*Fagus orientalis* Lipsky) species and some environmental variables in a mixed hardwood forest. (*Completed*)
6. **Navid Soltani**, M.Sc., Evaluating the beech stem quality in relation to environmental variables and competition index in Tarbiat Modares University research station. (*Completed*)
7. **Atefeh Mohammadi**, M.Sc., Mapping the suitable habitat of Wych elm (*Ulmus glabra* Huds.) using Species Distribution Models in Kheyroud Forest, Nowshahr, Iran. (*Completed*)
8. **Shadi Habibi**, M.Sc., Ecological niche analysis of box tree (*Buxus hyrcana* Pojark.) in the Hyrcanian Forests. (*Completed*)
9. **Aref Hesabi**, M.Sc., Spatial pattern and competition status of *Taxus baccata* L. in Afratakhteh forests of Gorgan, Iran. (*Completed*)
10. **Amir Fathollahzadeh**, M.Sc., Response Curve and Species Distribution Model of Beech, Basswood, Ironwood, Maple and Alder in Educational and Research Forest of Tarbiat Modares University. (*Completed*)

11. **Razie Veis Karami**, M.Sc., Structural Diversity of yew (*Taxus baccata* L.) in Siah Roudbar and Afratakhte Forests in Golestan Province. (*Completed*)

Thesis Co-Supervised (Ph.D.)

1. **Somayyeh Solgi**, Ph.D., Evaluating the productivity of *Populus deltoides* sites in relation to some edaphic variables and plant biodiversity based on site index in plantations of Guilan Province, Iran. (*Completed*)
2. **Saeid Shabanei**, Ph.D., Modelling occurrence of soil and forest stand disturbance caused by logging operation. (*Completed*)
3. **Sahar Kargar**, Ph.D., Prediction of spatial distribution of plant functional traits (case study: Lasem rangelands, Iran). (*Completed*)
4. **Mohammad Naghi Adel**, Ph.D., Structure, composition and effective environmental factors on riparian forests (case study: Safaroud river basin, Ramsar, Iran). (*Completed*)
5. **Amir Safari**, Ph.D., The effect of local management and climate change on aboveground carbon stock in Zagros oak forests by using remote sensing. (*Completed*)
6. **Mohammad Kazem Parsapour**, Ph.D. (2019). Dynamic of microbial catabolic diversity in relation to labile fractions of soil organic matter in nitrogen-fixing and non-nitrogen-fixing forest plantations. (*Completed*)
7. **Saied Kian**, Ph.D. (2018). Gap disturbance regime and replacement pattern in Eastern Hyrcanian oriental beech (*Fagus orientalis* Lipsky) Forests. (*Completed*)
8. **Seyed Amir Naghibi**, Ph.D. (2019). Potential mapping for flood spreading in the Mashhad plain using statistical and data mining methods. (*Completed*)
9. **Neda Ghorbanzadeh**, Ph.D. (2017). Evaluating the spatial variability of some physical, chemical and biology indicators soil quality in plantation of west of Guilan province. (*Completed*)
10. **Leila Vatani**, Ph.D. (2019). Effect of Italian cypress, poplar, oak, alder and maple plantations on some effective global warming parameters. (*Completed*)
11. **Jahede Tekeyekhah**, Ph.D. (2019). Evaluation of tree species of Abidar Forest Park in Sanandaj based on ecosystem services. (*Completed*)
12. **Maziar Mohammadi Khanghah**, Ph.D. (2021). Temporal Variations of Sediment Source and Quality in Talar Watershed. (*Completed*)
13. **Sajjad Mirzaei**, Ph.D. (***). Variability of flood zones under climate change scenarios and some data mining methods. (*Ongoing*)
14. **Pari Karami**, Ph.D. (***). Classification of yew (*Taxus baccata* L.) plant communities in eastern Hyrcanian forests. (*Ongoing*)

Thesis Co-Supervised (M.Sc.)

1. **Farzaneh Sohrabi**, M.Sc, Prioritizing the prone areas of harvesting using artificial neural network and multiple linear regression. (*Completed*)
2. **Ali Mohammad Sharifi**, M.Sc, Evaluating the response of *Festuca ovina* l. species to some environmental variables using HOF functions in the rangeland of Galandoroud watershed, Nour, Iran. (*Completed*)
3. **Naghmeh Pak Gohar**, M.Sc, Investigation on the different ordination methods and presenting the most relevant method for vegetation (Case Study: Urmia Airport Plantation). (*Completed*)
4. **Azadeh Katebi Kord**, M.Sc, Analyzing the effects of rainfall duration on soil erosion process in filed plots under rainfall simulation. (*Completed*)
5. **Hiro Mohammad Amini**, M.Sc, aNalyzing the effects of soil surface rock fragments on soil erosion process in filed plots under rainfall simulation. (*Completed*)
6. **Azimeh Saeedi Abues'haqi**, M.Sc, Modeling aboveground biomass of Persian oak using canopy height models derived from LiDar and photogrammetric matching of aerial images. (*Completed*)
7. **Amin Mahmodian**, M.Sc, Response of Halophyte species to some environmental gradients (case study in the salt rangeland of Inchboroun in the Golestan Province. (*Completed*)
8. **Mohammad Javad Heidari**, M.Sc. (2016). Pavement deterioration modeling for forest roads based on artificial neural network and logistic regression. (*Completed*)
9. **Fahime Bazyar**, M.Sc. (2015). Ecological niche of forb plants in rangelands of Galandroud watershed. (*Completed*)
10. **Zahra Karamdar**, M.Sc. (2016). Extending Ellenberg's indicator values for vascular plant in Hyrcanian box tree (*Buxus hyrcana* Pojark.) forests. (*Completed*)
11. **Fateme Heydari**, M.Sc. (2015). Response of *Bromus tomentellus* Boiss to some environmental variables using the HOF function and GAM model in the rangelands of Galandroud watershed. (*Completed*)
12. **Zhaleh Siabi**, (2018). Modeling the spatial distribution of CO₂ in relation to land cover components using OCO-2 satellite data. (*Completed*)
13. **Eisa Gholami**, M.Sc. (2018). Efficiency of different statistical models for mapping the flood prone areas in Guilan province. (*Completed*)
14. **Mohammadreza Abbaszadeh**, (2020). Classification and Ecological Profile of Yew (*Taxus baccata* L.) Plant Communities in Central Hyrcanian Forests (Case Study: Gazou and Haraz Vallies). (*Completed*)

Research projects

1. Quantitative autecology of endangered yew tree (*Taxus baccata* L.) and the effect of climate change on its distribution in the Hyrcanian Forests (Northern Iran) (In Persian, *completed*). Funded by Iran National Science Foundation (INSF).
2. Modeling the spatial distribution of CO₂ in relation to land cover components using OCO-2 satellite data. (In Persian, *completed*) Iran National Science Foundation (INSF).

Referee for journals

Ecopersia
Environmental Monitoring and Assessment
Annals of Forest Science
Land Degradation and Development
Forest Science
Forestry. An International Journal of Forest Research
Scandinavian Journal of Forest Research
Nordic Journal of Botany
Journal of Arid Land
Arabian Journal of Geosciences

Publications (in English)

- 1- Ahmadi, K., Alavi, S. J., Kouchaksaraei, M. T., & Aertsens, W. (2013). Non-linear height-diameter models for oriental beech (*Fagus orientalis* Lipsky) in the Hyrcanian forests, Iran. *Biotechnol. Agron. Soc. Environ.* 17(3): 431-440.
- 2- Pourreza, M., Hosseini, S. M., Sinangani, A. A. S., Matinizadeh, M., & Alavi, S. J. (2014). Herbaceous species diversity in relation to fire severity in Zagros oak forests, Iran. *Journal of Forestry Research*, 25(1): 113-120.
- 3- Shabani, Saeid. Akbar Najafi. Baris Majnonian. Seyed Jalil Alavi. Ali Sattarian. (2015). Ecological Modelling as a Tool for Damages Reduction in Forest Ecosystems during Skidding. *Journal of Research in Ecology*. 3(1): 021-030
- 4- Navroodi, I. H., Alavi, S. J., Ahmadi, M. K., & Radkarimi, M. (2016). Comparison of different non-linear models for prediction of the relationship between diameter and height of velvet maple trees in natural forests (case study: Asalem Forests, Iran). *Journal of Forest Science*, 62(2), 65-71.
- 5- Ahmadi, K. and Alavi, S. J., (2016). Generalized Height-Diameter Models for *Fagus orientalis* Lipsky. in Hyrcanian Forest, Iran. *Journal of Forest Science*, 62(9), 413-421.
- 6- Adel, M. N., Pourbabaei, H., Salehi, A., Alavi, S. J., & Dey, D. C. (2018). Structure, composition and regeneration of riparian forest along an altitudinal gradient in northern Iran. *Folia Geobotanica*, 53, 63-75.
- 7- Ahmadi, K., Alavi, S. J., & Kouchaksaraei, M. T. (2017). Constructing site quality curves and productivity assessment for uneven-aged and mixed stands of oriental beech (*Fagus orientalis* Lipsky) in Hyrcanian forest, Iran. *Forest Science and Technology*, 13(1), 41-46.
- 8- Adel, M. N., Pourbabaei, H., Alavi, S. J., & Salehi, A. (2017). Response curves of seventeen woody species to soil factors along a riparian forest in northern Iran. *Russian Journal of Ecology*, 48(3), 219-225.

- 9- Katebikord, A., Darvishan, A. K., & Alavi, S. J. (2017). Changeability of soil erosion variables in small field plots from different rainfall durations with constant intensity. *Journal of African Earth Sciences*, 129, 751-758.
- 10- Kian, S., Kouchaksaraei, M. T., Esmailzadeh, O., & Alavi, S. J. (2017). Gap Characteristics and Disturbance Regime in an Intact Hyrcanian Oriental Beech Forest, Iran. *Austrian Journal of Forest Science*, 134(4), 323-345.
- 11- Parsapour, M. K., Kooch, Y., Hosseini, S. M., & Alavi, S. J. (2018). C and N cycle monitoring under *Quercus castaneifolia* plantation. *Forest Ecology and Management*, 427, 26-36.
- 12- Parsapour, M. K., Kooch, Y., Hosseini, S. M., & Alavi, S. J. (2018). Litter and topsoil in *Alnus subcordata* plantation on former degraded natural forest land: A synthesis of age-sequence. *Soil and Tillage Research*, 179, 1-10.
- 13- Ghorbanzadeh, N., Salehi, A., Pourbabaei, H., Tolarod, A. A. S., & Alavi, S. J. (2019). Spatial variability of soil microbial indices in common alder COMMON ALDER (*Alnus glutinosa*) stands using a geostatistical approach in northern Iran. *Journal of forestry research*, 30(2), 679-688.
- 14- Kargar, M., Jafarian, Z., Tamartash, R., & Alavi, S. J. (2018). Prediction of Spatial Distribution of Plant Species Richness in the Valdarreh Rangelands, Mazandaran by Macroecological Modelling and Stacked Species Distribution Models. *ECOPERSIA*, 6(2), 139-145.
- 15- Kargar, M., Jafarian, Z., Tamartash, R., & Alavi, S. J. (2019). Spatial distribution modelling of plant functional diversity in the mountain rangeland, north of Iran. *Ecological Indicators*, 97, 231-238.
- 16- Heidari, M. J., Najafi, A., & Alavi, S.J. (2018). Pavement Deterioration Modeling for Forest Roads Based on Logistic Regression and Artificial Neural Networks. *Croatian Journal of Forest Engineering*, 39(2), 271-287.
- 17- Naghibi, S.A., Vafakhah, M., Hashemi, H., Biswajeet, P., & Alavi, S. J. (2018). Groundwater Augmentation through the Site Selection of Floodwater Spreading Using a Data Mining Approach (Case study: Mashhad Plain, Iran). *Water* 10, no. 10: 1405.
- 18- Alavi, S. J., Ahmadi, K., Hosseini, S. M., Tabari, M., & Nouri, Z. (2019). The response of English yew (*Taxus baccata* L.) to climate change in the Caspian Hyrcanian Mixed Forest ecoregion. *Regional Environmental Change*, 19(5): 1495-1506.
- 19- Siabi, Z., Falahatkar, S., Alavi, S.J. (2019). Spatial distribution of XCO₂ using OCO-2 data in growing seasons. *Journal of Environmental Management*, 244:110-118.
- 20- Ghorbanzadeh, N., Pourbabaei, H., Salehi, A., Soltani Toolarood, A., & Alavi, S. J. (2019). Spatial analysis of biodiversity soil macrofauna in *Populus deltoides* plantation of northern forests of Iran. *Caspian Journal of Environmental Sciences*, 17(2):155-162.
- 21- Shabani, S., Najafi, A., Majnonian, B., Alavi, J., & Sattarian, A. (2019). Spatial prediction of soil disturbance caused by forest logging using generalized additive models and GIS. *European Journal of Forest Research*, 138(4):595-606.
- 22- Taleshi, H., Jalali, S.Gh., Alavi, S.J., Hosseini, S.M., Naimi, B and Zimmermann, N.E. (2019). Climate Change Impacts on the Distribution and Diversity of Major Tree Species in the Temperate Forests of Northern Iran, *Regional Environmental Change*, 19(4):2711-2728.
- 23- Ahmadi, K., Alavi, S. J., Zahedi Amiri, Gh., Hosseini, S. M., Serra-Diaz, J.M. and Svenning, J.C. (2019). Patterns of density and structure of natural population of *Taxus baccata* L. in the Hyrcanian forests of Iran. *Nordic Journal of Botany*, 38(3):1-10.

- 24- Vafakhah, M., Mirzaei, S., Pradhan, B. and Alavi, S.J. (2020). An improved land use classification scheme using multi-seasonal satellite images and secondary data, *Ecopersia Journal*, 8(2):97-107.
- 25- Hosseini, S. M., Raeini Sarjaz, M., Alavi, S. J., Shamsi, S. S., & Zohd Ghodsi, M. J. Effect of tree species on albedo in Iranian temperate forests: comparing conifers and broadleaf trees in two seasons. *Journal of Solar Energy Research*, 4(3), 188-199.
- 26- Vatani, L., Hosseini, S. M., Sarjaz, M. R., & Alavi, S. J. (2019). Tree species effects on albedo, soil carbon and nitrogen stocks in a temperate forest in Iran. *Austrian Journal of Forest Science*, 136(3), 283-310.
- 27- Karami-Kordalivand, P., Esmailzadeh, O., Willner, W., Noroozi, J., & Alavi, S. J. (2021). Classification of forest communities (co-) dominated by *Taxus baccata* in the Hyrcanian forests (northern Iran) and their comparison with southern Europe. *European Journal of Forest Research*, 140(2), 463-476.
- 28- Vatani, L., Hosseini, S. M., Sarjaz, M. R., & Alavi, S. J. (2019). Tree species effects on albedo, soil carbon and nitrogen stocks in a temperate forest in Iran. *AUSTRIAN JOURNAL OF FOREST SCIENCE*, 136(3), 283-310.
- 29- Hosseini, S. M. (2019). Species-related difference to noise reduction between trees in urban forest: the Abidar Forest Park (case study). *Sound & Vibration*, 53(6), 263-276.
- 30- Ahmadi, K., Alavi, S. J., Amiri, G. Z., Hosseini, S. M., Serra-Diaz, J. M., & Svenning, J. C. (2020). The potential impact of future climate on the distribution of European yew (*Taxus baccata* L.) in the Hyrcanian forest region (Iran). *International Journal of Biometeorology*, 64, 1451-1462.
- 31- Alavi, S. J., Ahmadi, K., Dormann, C.F., Serra-Diaz, J.M., Nouri, N. (2020). Application of machine learning algorithms for predicting dominant height of Oriental beech (*Fagus orientalis* L.) in the Hyrcanian Forests of Iran. *Biotechnol. Agron. Soc. Environ*, 24(4), 262-273.
- 32- Mirzaei, S., Vafakhah, M., Pradhan, B., & Alavi, S. J. (2021). Flood susceptibility assessment using extreme gradient boosting (EGB), Iran. *Earth Science Informatics*, 14(1), 51-67.
- 33- Mirzaei, S., Vafakhah, M., Pradhan, B., & Jalil Alavi, S. J. (2020). Prediction and Analysis of Flood Zones under Climate Change Conditions based on CanESM2 Model's Scenarios. *Iranian journal of Ecohydrology*, 7(2), 551-562.
- 34- Alavi, S. J., Veiskarami, R., Esmailzadeh, O., & Gadov, K. V. (2020). Analyzing the Biological and Structural Diversity of Hyrcanian Forests Dominated by *Taxus baccata* L. *Forests*, 11(6), 701.
- 35- Ahmadi, K., Alavi, S. J., Zahedi Amiri, Gh., Hosseini, S. M., Serra-Diaz, J.M. and Svenning, J.C. (2020). Modeling response curves of English yew using Huisman–Olf–Fresco models along the environmental gradient in temperate forests of Iran. *Forest Science and Technology* (Under Review).

Publications (in Persian)

- 1- Alavi, S. J., Zahedi Amiri, Gh. & Marvie Mohajer, M.R. (2006). An Investigation of Spatial Pattern in Wych Elm (*Ulmus glabra*) in Hyrcanian Forest, Case Study: Kheyroudkenar Forest, Noshahr. *Journal of Iranian Natural Resources*. 58(4):793-804.
- 2- Zahedi Amiri, Gh., Alavi, S. J., Nouri, Z. & Marvie Mohajer, M.R. (2008). Investigation on the effects of some soil properties on spatial dispersion of Wych elm (*Ulmus glabra* Huds) in

- Hyrcanian forest, Case study: Kheyroudkenar forest. **Journal of Iranian Natural Resources**. 61(3): 637-652.
- 3- Alavi, S.J., Zahedi Amiri, G., Rahmani, R., Marvi Mohajer, M., Muys, B., Fathi, J. (2011). Extracting ecological optimum and amplitude of *Fagus orientalis* along environmental gradients in Kheyrud Forest, Nowshahr. **Journal of Natural Environment**, 64(4), 399-415.
 - 4- Alavi, S.J., Zahedi Amiri, G., Rahmani, R., Marvi Mohajer, M., Muys, B., Nouri, Z. (2013). Investigation on the response of *Fagus orientalis* Lipsky to some environmental variables using beta function and its comparison with Gaussian function (Case study: Kheyrud forest research station). **Iranian Journal of Forest**, 5(2), 161-171.
 - 5- Alavi, S.J., Zahedi Amiri, G., Nouri, Z., & Marvi Mohajer, M.R. (2014). Application of Ripley's K-Function in Detecting Spatial Pattern of Wych Elm Species in Khayroud Forests, North of Iran. **Journal of Wood and Forest Science and Technology**, 20(4), 21-39.
 - 6- Javadi, S.A., Jafari, M., Azarnivand, H., & Alavi, S.J. (2005). An Investigation of the Grazing Intensity Effects on Variations of Soil Organic Matter and Nitrogen in Lar Rangeland. **Iranian Journal of Natural Resources**, 58(3): 717-718.
 - 7- Nouri, Z., Feghhi, J., & Alavi, S. J. (2009). Investigation on the sustainability of tree species diversity using common sample plots in forest management planning (Case study: Gorazbon district, Kheyroud Forest). **Iranian Journal of Natural Resources**. 61(4): 909-919.
 - 8- Kargar, M., Jafariyan, Z., Tamartash, R., & Alavi, S. J. (2015). The effects of some soil properties and topography on some functional traits of *Stachys lavandulifolia* Vahl. in Angemar rangeland, Lasem watershed. **Journal of Rangeland**. 8(4): 342-350.
 - 9- Sharifi, A.M., Dianati Tilaki, Gh., & Alavi, S. J. (2015). Investigating the response of *Festuca ovina* L. to some environmental variables using HOF function in Galandroud watershed rangeland. **Journal of Rangeland**. 8(4): 328-341.
 - 10- Adel, M. N., Pourbabaei, H., Salehi, A., & Alavi, S. J. (2015). Flora, life form and chorological studies of riparian forest along Safa-Rud riverside in Ramsar forest between altitudinal ranges 350 to 2400 m a.s.l.. **Iranian Journal of Forest**, 6(4), 499-520.
 - 11- Pavand Derow, A., Salehi A., Poorbabaie H., & Alavi, S.J. (2015). Relation between establishment and distribution of *Acer velutinum* Boiss. with soil physical and chemical properties and topographic factors in Caspian forest: a case study of Nav Asalem district/ Guilan. **Iranian Journal of Plant Researches**, 27(4), 520-533.
 - 12- Peyrov, S., Najafi, A., & Alavi, S.J. (2014). Prediction of forest roadway using artificial neural network and multiple linear regressions. **Forest Sustainable Development**, 1(3), 285-296.
 - 13- Ahmadi, K., Alavi, S. J., Tabari Kouchaksaraei, M. & Aertsen, W. (2014). Comparison of non-linear height and diameter functions for oriental beech (*Fagus orientalis* Lipsky.) in a mixed and uneven-aged Caspian forest (Case Study: Tarbiat Modares University forest research station). **Iranian Journal of Forest**, 6(1), 11-22.

- 14- Ahmadi, K., Alavi, S. J., Tabari Kouchaksaraei, M. (2014). (2015). Evaluation of oriental beech (*Fagus orientalis* L.) site productivity using generalized additive model (Case study: Tarbiat Modares University Forest Research Station). **Iranian Journal of Forest**, 7(1), 17-32.
- 15- Eshaghi Rad, J., Pakgohar, N., Banj Shafei, A., & Alavi, S.J. (2015). Comparison of indirect ordination methods for analysis of the vegetation (Case study: Urmia airport plantation). **Iranian Journal of Forest and Poplar Research**, 23(4), 637-646.
- 16- Adel, M., Pourbabaei, H., Alavi, S.J., & Salehi, A. (2015). Modeling distribution of oriental beech (*Fagus orientalis* Lipsky) trees in riparian forest by HOF model. **Iranian Journal of Forest and Poplar Research**, 23(4), 707-718.
- 17- Dianati Tilaki, G., Mohammadsharifi, A., Alavi, S.J. (2015). Comparison of the ecological amplitude of *Festuca ovina* L., and *Poa bulbosa* L. to some environmental variables using the function HOF (Case study: Rangeland of Glandrood Watershed). **Journal of Range and Watershed Managment**, 68(2), 269-285.
- 18- Es'haghi-Rad, J., Pak Gohar, N., Banj Shafei, A., & Alavi, S.J. (2016). The Elimination's effect of rare species on principle component Analysis (Case Study: Jamand district, Nowshahr). **Journal of Forest Research and Development**, 1(3), 257-269.
- 19- Solgi, S., Salehi, A., Alavi, S.J., Pourbabaei, H., & Shabanpour, M. (2016). Evaluation of poplar (*Populus deltoids* Marsh.) stands height growth using a Generalized Additive Model (Case study: Guisoum & Haft-Daghanan region, Guilan province). **Iranian Journal of Forest and Poplar Research**, 24(2), 378-366.
- 20- Alavi, S.J., Mardanpour, V., & Dormann, C. (2016). Investigation on the adequacy of ordinary least square regression in modeling the oriental beech tree height in relation to environmental predictors in experimental and educational forest of Tarbiat Modares University. **Iranian Journal of Forest**, 8(1), 105-118.
- 21- Alavi, S.J., Nouri, Z., & Zahedi Amiri, G. (2017). Determining the most important environmental variables affecting on oriental beech (*Fagus orientalis* Lipsky.) site productivity using random forest technique in Khayroud forest, Nowshar. **Iranian Journal of Forest**, 8(4), 477-492.
- 22- Ahadi, Z., Alavi, S.J., & Hoseini, S.M. (2017). Beech forest site productivity mapping using ordinary kriging and IDW (Case study: research forest of Tarbiat Modares University). **Forest and Wood Products**, 70(1), 93-102.
- 23- Ahadi, Z., Alavi, S.J., & Hosseini, S.M. (2018). Investigation on the potential of regression kriging for mapping oriental beech forest site productivity in research forest of Tarbiat Modares University. **Iranian Journal of Forest**, 9(4), 571-585.
- 24- Mohammadi, A., Alavi, S.J., & Hosseini, S.M. (2017). Predicting the habitat suitability of Wych elm (*Ulmus glabra* Huds.) in Kheyroud Forest. **Journal of Wood and Forest Science and Technology**, 24(3), 67-80.
- 25- Alavi, S.J., Nouri, Z., & Zahedi Amiri, G. (2017). The response curve of beech tree (*Fagus Orientalis* Lipsky.) in relation to environmental variables using Generalized Additive Model in Khayroud Forest, Nowshahr. **Journal of Wood and Forest Science and Technology**, 24(1), 29-59.

- 26- Ahmadi, K., & Alavi, S.J. (2017). Evaluating the dominant height of oriental beech in relation to environmental variables in research forest of Tarbiat Modares University. **Forest and Wood Products**, 70(4), 569-578.
- 27- Alavi, S.J., Fakur, E., Tabari, M., & Ahmadi, K. (2017). Estimating the beech forest site productivity in Hyrcanian forest using classification and regression tree algorithm. **Forest and Wood Products**, 70(2), 221-229.
- 28- Dehghaninejad, S., Alavi, S.J., Hosseini, S.M. (2017). Evaluating the performance of variable selection methods in modeling the site productivity of Oriental Beech (*Fagus Orientalis* Lipsky). **Forest and Wood Products**, 70(3), 441-449.
- 29- Habibi Kilak, S., Alavi, S.J., Esmailzadeh, O. (2019). Analyzing the ecological niche of *Buxus hyrcana* Pojark in relation to some environmental variables in the northern forests of Iran. **Forest and Wood Products**, 71(1), 21-31.
- 30- Mohammadi, A., Alavi, S.J., & Hosseini, S.M. (2019). Predicting the potential habitat of Wych elm (*Ulmus glabra* Huds.) using the Maxent model in Kheyrod forest. **Iranian Journal of Forest**, 10(4), 475-486.
- 31- Taleshi, H., Jalali, S.Gh., Alavi, S.J., Hosseini, S.M., Naimi, B. (2018). Climate Change Impacts on the Distribution of oriental beech (*Fagus orientalis* Lipski) in the Hyrcanian Forests of Iran. **Iranian Journal of Forest**, 10(2), 251-266.
- 32- Najafi, A., Heidari, M.J., Alavi, S.J. (2017). The impact of equivalent axle load on pavement deterioration of forest roads. **Iranian Journal of Forest**, 9(1), 131-143.
- 33- Solgi, S., Salehi, A., Pourbabai, H., Shabanpour, M., Alavi, S.J. (2017). Estimation of soil moisture at field capacity and permanent wilting point based on some physical and chemical properties in forest soils. **Forest and Wood Products**, 70(1), 103-110.
- 34- Safari, A., Sohrabi, H., Shataei, Sh., & Alavi, S.J. (2018). Modeling aboveground carbon stock of Zagros forests using field data and Landsat 8 imagery. **Journal of Wood and Forest Science and Technology**, 24(4), 199-215.
- 35- Pakgozar, N., Eshaghi Rad, J., Banj Shafiei, A., Alavi, S.J. (2018). Effect of species frequency in identification of ecological patterns in Jamand district, Nowshahr. **Journal of Forest Research and Development**, 3(4), 317-328.
- 36- EshaghiRad, J., Pakgozar, N., Banj Shafie, A., & Alavi, S.J. (2017). Comparison of direct Ordination methods in vegetation analysis in Jamand district of Noshahr Forests. **Iranian Journal of Forest**, 9(1), 119-130.
- 37- Heidari, M.J., Najafi, A., Alavi, S.J. (2016). Detecting the warning level of forest roads pavement using the genetic algorithm. **Iranian Journal of Forest and Poplar Research**, 24(4), 587-577.
- 38- Kargar, M., Jafariyan, Z., Tamartash, R., & Alavi, S. J. (2017). The study distribution and some ecological indices plant species, Siahboneh Rangeland, Haraz. **Iranian Journal of Plant Researches**, 29(4), 855-866.
- 39- Heidari, F., Dianati Tilaki, G., & Alavi, S.J. (2017). Comparison of the ecological amplitude of *Bromus tomentellus* B., and *Festuca ovina* L. to some environmental variables using the function HOF (Case study: Rangeland of Glandrood Watershed). **Iranian Journal of Plant Researches**, 30(2), 318-333.

- 40- Heidari, F., Dianati Tilaki, G., Alavi, S.J. (2017). Evaluation on the response of *Bromus tomentellus* Boiss and *Festuca ovina* L., to some environmental variables using the Generalized Additive Model(GAM) in the rangeland of Galandrood watershed in Mazandaran province, Iran. **Iranian Journal of Plant Biology**, 33(9), 79-94.
- 41- Mahmoodian Chooplu, A., Dianati Tilaki, G., Alavi, S. J. (2017). Investigating *Aeluropus lagopoides* and *Salsola turcomanica* response curves to some environmental gradients using HOF function in Inchehboroun rangelands. **Journal of Rangeland**, 10(3), 268-281.
- 42- Mahmoodian Chooplu, A., Dianati Tilaki, G., Alavi, S. J. (2017). Investigation on the response of *Frankenia hirsuta* species to some environmental gradients using HOF function in the saline rangelands of Inchehbrun, Golestan province. **Desert Ecosystem Engineering Journal**, 5(13), 25-38.
- 43- Heidari, F., Dianati Tilaki, G., Alavi, S.J. (2018). Comparison of the response curve of *Bromus tomentellus* Boiss. and *Achillea millefolium* L. species to some environmental gradients using the Generalized Additive Model in the rangeland of Galandrood watershed. **Journal of Plant Ecosystem Conservation**, 5 (11):17-34.
- 44- Heidari, F., Dianati Tilaki, G., Alavi, S.J. (2018). Investigating the response of *Bromus tomentellus* Boiss. to environmental gradients using HOF function in Galandrood watershed rangelands. **Journal of Rangeland**, 11(1), 1-14.
- 45- Katebikord, A., Khaledi Darvishan, A. & Alavi, S.J. (2018). Effects of Rainfall Duration on Hydrological Response of Field Plots under Rainfall Simulation. **Journal of Watershed Management Research**, 9 (17) :49-56.
- 46- Hesabi, A., Alavi, J., & Esmailzadeh, O. (2019). Studying the interaction between English yew (*Taxus baccata* L.) adult trees and its regeneration in Afratakhteh Forest Reserve, Golestan province. **Iranian Journal of Forest**, 11(2), 165-177.
- 47- Alavi, S.J., Zahedi Amiri, G., Marvi Mohajer, M.R., & Nouri, Z. (2007). Investigation on the spatial distribution of Wych elm (*Ulmus glabra* Huds.) in relation to physiographic factors in Khayroud Forests, North of Iran. **Journal of Environmental Studies**, 33(43), 93-100.
- 48- Vatani, L., Hosseini, S., Raeini Sarjaz, M., Alavi, S. (2019). The effect of tree species on greenhouse gas emissions from forest plantation soils (Case study: Sari, Iran). **Journal of Agricultural Meteorology**, 7(1), 36-46.
- 49- Ahmadi, K., Hosseini, S., Tabari, M., Nouri, Z. (2019). Modeling the potential habitat of English yew (*Taxus baccata* L.) in the Hyrcanian forests of Iran. **Journal of Forest Research and Development**, 5(4), 513-525.
- 50- Alavi, J., Ahmadi, K., Hosseini, S., Masoud, T., Nouri, Z. (2020). The importance of climatic, topographic and edaphic variables in the distribution of yew species (*Taxus baccata* L.) and prioritization of areas for conservation and restoration in the north of Iran. **Iranian Journal of Forest**, 11(4), 477-492.
- 51- Bazyar, F., Dianati, G., & Alavi, S. J. (2018). Comparison of the ecological amplitude of *Trifolium repens* and *Phlomis cancellata* to some environmental variables using HOF function (Case study: Glandrood watershed-Mazandaran province). **Rangeland**, 12(2), 124-137.
- 52- Mahmoodian, A., Dianati, G., Alavi, J. (2021). Investigating on the relationship between plant measurements of *Parapholis incurva* with environmental factors and water point distance in

- rangelands of Incheh Borun Golestan province (case Study: Incheh orun). *Environmental Sciences*, 19(1), 37-52.
- 53- Mohammadamini, H., & Alavi, J. (2020). Effects of Soil Surface Rock Fragments on Runoff Variables of Field Plots under Rainfall Simulation. *Journal of Watershed Management Research*, 11(22), 243-253.
- 54- Mirzaei, S., Vafakhah, M., Pradhan, B., Jalil Alavi, S. (2020). Prediction and Analysis of Flood Zones under Climate Change Conditions based on CanESM2 Model's Scenarios. *Iranian journal of Ecohydrology*, 7(2), 551-562.
- 55- Taleshi, H., Jalali, S. G., Alavi, S. J., Hosseini, S. M., & Naimi, B. (2020). Projection of Climate Change Impacts on Potential Distribution of Chestnut-leaved oak (*Quercus castaneifolia* CAM) Using Ensemble Modeling in the Hyrcanian Forests of Iran. *Ecology of Iranian Forest*, 8(15), 10-21.
- 56- Nouraei, A., Jalilvand or Djalilvand, H., Hojjati, S., Alavi, S. (2020). Response of Soil and Litter Chemical Characteristics to Simulation of Nitrogen Deposition in *Quercus castaneifolia* Stand. *Iranian Journal of Forest*, 12(1), 33-47.
- 57- Gholami, E., Vatakhah, M., Alavi, S. (2020). Evaluating the Different Statistical Models for Flood Susceptibility Mapping in Guilan Province. *Journal of Range and Watershed Management*, 72(4), 1011-1022.
- 58- Habibi Kilak, S., Alavi, S., Esmailzadeh, O. (2020). Analyzing the response curves of box tree (*Buxus hyrcana* Pojark.) species in relation to environmental variables in Hyrcanian forests. *Journal of Forest Research and Development*, 6(1), 1-14.
- 59- Tekeykhah J, Hossini M, Jalali G, Alavi J & Esmaili A. 2020. Investigating the Role of Tree Species in Urban Green Space in Modulating Temperature and Relative Humidity of the Environment (Case Study: Abidar Forest Park in Sanandaj). *Ecology of Iranian Forest*, 8 (16) :48-59.
- 60- Vatani, L., Hosseini, S., Alavi, S., Raeini Sarjaz, M., Shamsi, S. (2020). Soil physico-chemical properties 20 years after plantation in the Iranian northern forests (Emphasizing on carbon and nitrogen stocks in plantation with broadleaved and coniferous species). *Journal of Forest Research and Development*, (Under Press)
- 61- Parsapour, M., Kooch, Y., Hosseini, S., Alavi, S. (2021). Dynamic of soil carbon and nitrogen stoichiometry in oak and alder forest plantations. *Journal of Forest Research and Development*, (Under Press)

Workshops (Instructor)

1. "Application of R statistical software for data analysis". 2016. Faculty of Natural Resources, Tarbiat Modares University.
2. "Statistical Data Analysis Using R Software". 2016. The Second National Conference on Conservation of Natural Resources and Environment, University of Mohagheh Ardabili.
3. "Statistical Software R". 2019. The 5th National Conference on Climate Change and dendrochronology in Caspian Ecosystems, Faculty of Natural Resources, Sari University of Agricultural Sciences and Natural Resources.

4. "Data Mining using Biomod2 Package in R Software". 2020. Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University
5. "Application of R statistical software for data analysis". 2019. Faculty of Natural Resources, Tarbiat Modares University.
6. "Programming with R language". 2021. Faculty of Natural Resources, Tarbiat Modares University.

Training Workshops (Participation)

1. " Building a Multiple-Use Forest Management Framework to Conserve Biodiversity in the Caspian Hyrcanian Forest Landscape ", Forests, Rangelands and Watershed Management Organization. (2012). Introductory Workshop
2. "Forest Pests and Diseases", Mazandaran Agricultural and Natural Resources Research Center. (2012).
3. Building a Multiple-Use Forest Management Framework to Conserve Biodiversity in the Caspian Hyrcanian Forest Landscape ", Forests, Rangelands and Watershed Management Organization. (2012). Final Workshop
4. "Close-to-Nature silviculture in temperate ecosystems", Faculty of Forest Sciences, Gorgan University of Agricultural Sciences and Natural Resources. (2012).
5. "Global Warming, Climate Change and Natural Resources", Faculty of Natural Resources, Tarbiat Modares University. (2013).
6. "Reference management software (EndNote and Mendeley)", Faculty of Natural Resources, Tarbiat Modares University. (2013).
7. "The Cultural mission of academic staffs in the educational process", Tarbiat Modares University. (2012). Introductory Workshop
8. "The Cultural mission of academic staffs in the educational process", Tarbiat Modares University. (2012). Advanced Workshop
9. "The Counseling techniques for students", Tarbiat Modares University. (2012).
10. "The role of academic professors in students' mental health", Tarbiat Modares University. (2015).
11. "Application of Mendeley reference management system", Faculty of Natural Resources, Sari University, Mazandaran. (2016).
12. "Essay Writing Workshop in ISI International Journals", Tarbiat Modares University. (2017).
13. "Workshop on presenting the papers in international conferences", Tarbiat Modares University. (2017).

Manufacture of laboratory equipment and devices:

- 1- System for measuring the absorption of suspended particles on the leaf surface of trees using leaf weight (patent)