

CURRICULUM VITAE

PERSONAL DETAILS

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FINAL POSITION EMPLOYED

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EDUCATIONAL STATUS

UNDERGRADUATE

University: Ankara University

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Program/Department: Agricultural Engineering

Date of Graduation: 1992

POST-GRADUATE

University: Ankara University

Institute: Institute of Natural & Applied Sciences

Field: Agricultural Engineering

Title of Thesis: Determining of Adequacy of Farm Irrigation Structures in the Irrigation Schemes

Date of Graduation: 1995

DOCTORATE

University: Ankara University

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Title of Thesis: Application of Runoff and Sediment Yield Models by Geographic Information System

Date of Graduation: 2002

Dr. Halit Apaydin is a professor in Agricultural Engineering who conducts research related to hydrology, artificial intelligence, water resources, runoff, land consolidation, and GIS. Dr. Apaydin's research focuses on evapotranspiration, runoff, irrigation, and water conservation. His research involves artificial intelligent on water resources management, dam management etc. He also has experience in rainfall-runoff relationship, streamflow forecast, stochastic operation analysis of irrigation reservoir.

Publications

- Sibtain, Muhammad; Li, Xianshan; Saleem, Snoober; Shi, Qiang; Li, Fei; Apaydin, Halit. 2025. A nature-inspired and noise-assisted feature extraction integrating spatiotemporal attention-based sequence2sequence for multivariate wind speed prediction. Stochastic Environmental Research and Risk Assessment, 39 (1): 343-359
- Sattari, Mohammad Taghi; Kamrani, Yasaman; Javidan, Sahar; Attar, Nasrin Fathollahzadeh; Apaydin, Halit. 2025. Groundwater quality mapping based on the Wilcox Classification method for agricultural

purposes: Qazvin Plain aquifer case. Turkish Journal of Engineering, 9 (1): 116-128

- Shamloo, Nazila; Sattari, Mohammad Taghi; Kamran, Khalil Valizadeh; Apaydin, Halit. 2025. An integrated artificial intelligence-deep learning approach for vegetation canopy assessment and monitoring through satellite images. Stochastic Environmental Research and Risk Assessment. 44927
- Asghar Rostami, Ali; Taghi Sattari, Mohammad; Apaydin, Halit; Milewski, Adam. 2025. Modeling Flood Susceptibility Utilizing Advanced Ensemble Machine Learning Techniques in the Marand Plain. Geosciences, 15 (3): 110
- Akcapinar, Muhammed Cem; Apaydin, Halit. 2025. Early yield estimation in wheat using open access global datasets and artificial intelligence. Computers and Electronics in Agriculture, 237: 110486
- Attar, Nasrin Fathollahzadeh; Sattari, Mohammad Taghi; Apaydin, Halit. 2024. A novel stochastic tree model for daily streamflow prediction based on a noise suppression hybridization algorithm and efficient uncertainty quantification. Water Resources Management, 38 (6): 1943-1964
- Mousavi, Seyed Nasrollah; Apaydin, Halit; Sattari, Mohammad Taghi; Abraham, John Patrick. 2024. Extreme pressure coefficients: modelling a hydraulic jump using deep-learning based methods. Sādhanā, 49 (2): 151
- Sattari, Mohammad Taghi; Apaydin, Halit. 2024. Application of data driven models in estimating daily reference evapotranspiration in a coastal region. International Journal of Sustainable Agricultural Management and Informatics, 10 (3): 296-326
- Dagdelen, Ender; Apaydin, Halit. 2024. Cost-effectiveness of Hydroelectric Turbines and Pumps as an Alternative to Pressure-Reducing Valves for Electricity Production in Irrigation Lines in Turkey. Water Conservation Science and Engineering, 9 (2): 59
- Sattari, Mohammad Taghi; Apaydin, Halit; Milweski, Adam. 2024. Kernel-based versus tree-based data-driven models: On applying suspended sediment load estimation. Water, 16 (20): 2973
- Feizi, H; Sattari, MT; Mosafieri, M; Apaydin, HALİT. 2023. An image-based deep learning model for water turbidity estimation in laboratory conditions. International Journal of Environmental Science and Technology, 20 (1): 149-160
- Attar, Nasrin Fathollahzadeh; Sattari, Mohammad Taghi; Prasad, Ramendra; Apaydin, Halit. 2023. Comprehensive review of solar radiation modeling based on artificial intelligence and optimization techniques: future concerns and considerations. Clean Technologies and Environmental Policy, 25 (4): 1079-1097
- Feizi, H; Sattari, MT; Prasad, R; Apaydin, HALİT. 2023. Comparative analysis of deep and machine learning approaches for daily carbon monoxide pollutant concentration estimation. International Journal of Environmental Science and Technology, 20 (2): 1753-1768
- Anli, Alper Serdar; Modarres, Reza; Apaydin, Halit. 2023. A hybrid approach for regional low-flow frequency analysis for the upper Tigris and Euphrates basin. Journal of Hydrologic Engineering, 28 (6): 4023015
- Pekin, MuhammetAli; Demirbag, NurdanSahin; Khawar, Khalid Mahmood; Apaydin, Halit. 2023. Estimation of Alfalfa (Medicago sativa L.) yield under RCP4. 5 and RCP8. 5 climate change projections with ANN in Turkey. Mausam, 74 (3): 847-860
- Cetintas, Aydin Ozan; Apaydin, Halit. 2023. Modeling and prediction of meteorological parameters using the arima and LSTM methods: Sivas Province case. Novel & Intelligent Digital Systems Conferences, 250-261
- Sattari, Mohammad Taghi; Avram, Anca; Apaydin, Halit; Matei, Oliviu. 2023. Evaluation of Feature Selection Methods in Estimation of Precipitation Based on Deep Learning Artificial Neural Networks. Water Resources Management, 37 (15): 5871-5891
- Feizi, Hajar; Sattari, Mohammad Taghi; Apaydin, Halit. 2023. A comparative study of different optimization algorithms for the optimum operation of the Mahabad dam reservoir. Results in Engineering, 21 : 101664
- Shamloo, Nazila; Sattari, Mohammad Taghi; Valizadeh Kamran, Khalil; Apaydin, Halit. 2023. Evaluation of Combined Agricultural Drought Index (CDI), Prediction Methods Based on Satellite Images via Deep Learning and Machine Learning Approaches. Water and Soil, 37 (5): 787-807
- Cetintas, Aydin Ozan; Apaydin, Halit. 2023. Parameters Using the Arima and LSTM. Novel & Intelligent Digital Systems: Proceedings of the 3rd International Conference (NiDS 2023): Volume 1, 783 : 250
- Feizi, Hajar; Apaydin, Halit; Sattari, Mohammad Taghi; Colak, Muslume Sevba; Sibtain, Muhammad. 2022. Improving reservoir inflow prediction via rolling window and deep learning-based multi-model approach: case study from Ermenek Dam, Turkey. Stochastic Environmental Research and Risk Assessment, 36 (10): 3149-3169
- Shamloo, Nazila; Sattari, Mohammad Taghi; Apaydin, Halit. 2022. Agricultural drought survey using

MODIS-based image indices at the regional scale: case study of the Urmia Lake Basin, Iran. *Theoretical and Applied Climatology*, 149 (45689): 39-51

- Apaydin, Halit; Feizi, Hajar; Akcakoca, Fatma; Sattari, Mohammad Taghi. 2022. Daily streamflow modelling in the Nalli River using recurrent neural networks. *International Conference "New Technologies, Development and Applications"*, 813-822
- Salmasi, Farzin; Sattari, Mohammad Taghi; Apaydin, Halit. 2022. Mathematical based implicit and explicit finite difference techniques for solving the ground water flow equations using spreadsheets. *International Journal of Mathematical Sciences and Computing (IJMSC)*, 8 (4): 41640
- POLAT, Turgay; ÇOLAK, Ahmet; DAYIOĞLU, Mehmet Ali; APAYDIN, Halit. 2022. Determination of the working performance of a new fertigation system developed for hose reel irrigation machine. *Soil Studies*, 11 (1): 43435
- Sattari, Mohammad Taghi; Apaydin, Halit; Band, Shahab S; Mosavi, Amir; Prasad, Ramendra. 2021. Comparative analysis of kernel-based versus ANN and deep learning methods in monthly reference evapotranspiration estimation. *Hydrology and Earth System Sciences*, 25 (2): 603-618
- Sattari, Mohammad Taghi; Ahmadifar, Vahdat; Delirhasannia, Reza; Apaydin, Halit. 2021. Estimation of the pan evaporation coefficient in cold and dry climate conditions via the M5 regression tree model. *Atmosfera*, 34 (3): 289-300
- Sibtain, Muhammad; Li, Xianshan; Saleem, Snoober; Asad, Muhammad Saqlain; Tahir, Touseef; Apaydin, Halit. 2021. A multistage hybrid model ICEEMDAN-SE-VMD-RDPG for a multivariate solar irradiance forecasting. *IEEE Access*, 9 : 37334-37363
- Sattari, Mohammad Taghi; Feizi, Hajar; Colak, Muslume Sevba; Ozturk, Ahmet; Ozturk, Fazli; Apaydin, Halit. 2021. Surface water quality classification using data mining approaches: Irrigation along the Aladag River. *Irrigation and Drainage*, 70 (5): 1227-1246
- Apaydin, Halit; Sattari, Mohammad Taghi; Falsafian, Kambiz; Prasad, Ramendra. 2021. Artificial intelligence modelling integrated with Singular Spectral analysis and Seasonal-Trend decomposition using Loess approaches for streamflow predictions. *Journal of Hydrology*, 600 : 126506
- Apaydin, Halit; Sibtain, Muhammad. 2021. A multivariate streamflow forecasting model by integrating improved complete ensemble empirical mode decomposition with additive noise, sample entropy, Gini index and sequence-to-sequence approaches. *Journal of Hydrology*, 603 : 126831
- Shamloo, Nazila; Taghi Sattari, Mohammad; Apaydin, Halit; Valizadeh Kamran, Khalil; Prasad, Ramendra. 2021. Evapotranspiration estimation using SEBAL algorithm integrated with remote sensing and experimental methods. *International Journal of Digital Earth*, 14 (11): 1638-1658
- Sattari, Mohammad Taghi; Apaydin, Halit; Shamshirband, Shahab; Mosavi, Amir. 2021. Comparative analysis of Kernel-based versus BFGS-ANN and deep learning methods in monthly reference evaporation estimation. *Hydrol. Earth Syst. Sci. Discussions*, 25: 45292
- Eroğlu, Tülay Akkurt; Apaydin, Halit. 2020. Estimation of drought by streamflow drought index (SDI) and artificial neural networks (ANNs) in Ankara-Nallihan region. *Turkish Journal of Agriculture-Food Science and Technology*, 8 (2): 348-357
- Akçakoca, Fatma; Apaydin, H. 2020. Modelling of Bektas Creek daily streamflow with generalized regression neural network method. *International Journal of Advances in Scientific Research and Engineering*, 6 (2): 97-103
- Sattari, Mohammad Taghi; Apaydin, Halit; Shamshirband, Shahaboddin. 2020. Performance evaluation of deep learning-based gated recurrent units (GRUs) and tree-based models for estimating ETo by using limited meteorological variables. *Mathematics*, 8 (6): 972
- Sattari, Mohammad Taghi; Feizi, Hajar; Colak, Muslume Sevba; Ozturk, Ahmet; Apaydin, Halit; Ozturk, Fazli. 2020. Estimation of sodium adsorption ratio in a river with kernel-based and decision-tree models. *Environmental Monitoring and Assessment*, 192 (9): 575
- Sattari, Mohammad Taghi; Avram, Anca; Apaydin, Halit; Matei, Oliviu. 2020. Soil temperature estimation with meteorological parameters by using tree-based hybrid data mining models. *Mathematics*, 8 (9): 1407
- Apaydin, Halit; Sattari, Mohammad Taghi. 2020. Deep-learning GIS hybrid approach in precipitation modeling based on spatio-temporal variables in the coastal zone of Turkey. *Climate Research*, 81: 149-165
- Apaydin, H; Feizi, H; Sattari, MT; Colak, MS; Shamshirband, S; Chau, KW. 2020. Comparative analysis of recurrent neural network architectures for reservoir inflow forecasting. , 12 (5): 1500
- Taghi Sattari, M; Pal, Mahesh; Apaydin, Halit; Ozturk, Fazli. 2013. M5 model tree application in daily river flow forecasting in Sohu Stream, Turkey. *Water Resources*, 40 (3): 233-242
- SATTARI, MOHAMMAD TAGHI; Apaydin, Halit; ÖZTÜRK, FAZLI. 2013. Stochastic operation analysis of irrigation reservoir in low-flow conditions: a case study from Eleviyan Reservoir, Iran. *Turkish Journal*

- Sattari, M.T., **Apaydin, H.** and Ozturk, F. 2013. Stochastic operation analysis of irrigation reservoir in low-flow conditions: a case study from Eleviyan Reservoir, Iran. Turkish Journal of Agriculture and Forestry, 37(5):613-622.
- Sattari, M.T., Pal, M. **Apaydin, H.** and Ozturk, F. 2013. M5 model tree application in daily river flow forecasting in Sohu Stream, Turkey. Water Resources, 40(3):233-242.
- Sattari, M.T., **Apaydin, H.** Ozturk, F. and Baykal, N. 2012. Application of a data mining approach to derive operating rules for the Eleviyan irrigation reservoir. Lake and Reservoir Management, 28(2):142-152.
- Sattari, M.T., **Apaydin, H.** and Ozturk, F. 2012. Flow estimations for the Sohu Stream using artificial neural networks. Environmental Earth Sciences, 66(7):2031-2045.
- Sattari, M.T., Anli, A. S., **Apaydin, H.** and Kodal, S. 2012. Decision trees to determine the possible drought periods in Ankara. Atmosfera, 25(1):65-83.
- **Apaydin, H.** Anli, A. S., and Ozturk, F. 2011. Evaluation of topographical and geographical effects on some climatic parameters in the Central Anatolia Region of Turkey. International Journal of Climatology. 31(9):1264-1279.
- B. Cakmak, **H. Apaydin.** 2010. Review. Advances in the management of the wastewater in Turkey: Natural treatment or constructed wetlands. Spanish Journal of Agricultural Research, 8(1):188-201
- Sattari, M.T., **Apaydin, H.** and Ozturk, F. 2009 Operation analysis of Eleviyan irrigation reservoir dam by optimization and stochastic simulation. Stochastic Environmental Research and Risk Assessment, 23(8):1187-1201
- Ozturk, F., Yurekli, K. and **Apaydin H.** 2008. Stochastic Modeling of Suspended Sediment from Yesilirmak Basin, Turkey. International J. of Natural and Engineering Sciences, 2(1):21-27.
- **Apaydin, H.**, Ozturk, F. and Merdun, H. 2007. Evaluation of Flow and Water Quality Monitoring Network Design by Using Digital Elevation Model (DEM) in the GAP Region of Turkey. Fresenius Environmental Bulletin 16(3):272-277.
- Anli, A.S., **Apaydin H.** and Ozturk F. 2007. Regional Flood Frequency Estimation For the Göksu River Basin Through L-Moments. International Congress on River Basin Management, pp. 424-438, March 22-24, Antalya.
- **Apaydin, H.**, Anli, A.S. and Ozturk, A. 2006. Temporal Transferability of Calibrated Parameters of a Hydrological Model. Ecological Modelling 195 (3-4):307-317.
- Anli, A.S., **Apaydin, H.** and Ozturk F., 2006. Advanced Methods Applied In Regional Flood Frequency Analysis. The 3rd International Conference on the Water Resources in the Mediterranean Basin (WATMED 3) 1-3 November 2006, Tripoli, Lebanon.
- **Apaydin, H.**, Erpul, G., Bayramin, I. and Gabriels, D. 2006. Evaluation of indices for characterizing the distribution and concentration of precipitation: a case for the region of Southeastern Anatolia Project, Turkey. Journal of Hydrology 328 (3-4):726-732.
- **Apaydin, H.**, Ozturk, F., Merdun, H. and Aziz, N.M. 2006. Determination of the drainage basin characteristics using vector GIS. Nordic Hydrology 37 (2):129-142.
- **Apaydin, H.** and Yıldırım, O. 2005. Graphical method for determining lateral and manifold pipe diameters in drip irrigation. Irrigation and Drainage, 54(2):145–154.
- **Apaydin, H.**, Sönmez, F.K. and Yıldırım, Y.E. 2004. Spatial interpolation techniques for climate data in the GAP region in Turkey. Climate Research, 28(1):31-40.
- Öztürk, F., **Apaydin, H.** and Walling, D.E. 2001. Suspended sediment loads through flood events for streams of Sakarya river basin. TUBITAK Turkish Journal of Engineering and Environmental Sciences, 25(6):643-650, Ankara.
- Öztürk, F. and **Apaydin, H.** 1998. Estimating pan evaporation from limited meteorological observation from Turkey. Water International, 23(3): 184-189.