

# Prof. Dr. Orhan GÜNDÜZ

## PERSONAL DETAILS

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## SPECIALIZATION

- Surface and subsurface water quality
- Environmental modeling
- Numerical methods in environmental engineering
- Flow and contaminant transport in surface and subsurface waters
- Dynamic interactions of surface and subsurface systems
- Source/sink terms in environmental modeling
- Environmental impact assessment
- Geographic information systems

## EDUCATIONAL BACKGROUND

2000 - 2004 Ph.D. in Civil and Environmental Engineering  
School of Civil and Environmental Engineering  
Georgia Institute of Technology  
Atlanta, GA, USA

1998 - 2000 M.S. in Civil Engineering  
School of Civil and Environmental Engineering  
Georgia Institute of Technology  
Atlanta, GA, USA

1994 - 1997 M.S. in Environmental Engineering  
Department of Environmental Engineering  
Middle East Technical University  
Ankara, TURKEY

1990 - 1994 B.S. in Environmental Engineering  
Department of Environmental Engineering  
Middle East Technical University  
Ankara, TURKEY

## **PROFESSIONAL BACKGROUND**

- 2021 - Prof. Dr.  
Department of Environmental Engineering  
Izmir Institute of Technology  
Izmir, TURKEY
- 2014 - 2021 Assoc. Prof. Dr.  
Department of Environmental Engineering  
Dokuz Eylul University  
Izmir, TURKEY
- 2006 - 2014 Assist. Prof. Dr.  
Department of Environmental Engineering  
Dokuz Eylul University  
Izmir, TURKEY
- 2004 - 2006 Researcher  
Department of Environmental Engineering  
Dokuz Eylul University  
Izmir, TURKEY
- 1998 - 2004 Research and Teaching Assistant  
School of Civil and Environmental Engineering  
Georgia Institute of Technology  
Atlanta, GA, USA
- 1997 - 1998 Project Coordinator  
METU Prof. Dr. Mustafa Parlar Education and Research Foundation  
Ankara, TURKEY
- 1994 - 1997 Research and Teaching Assistant  
Department of Environmental Engineering  
Middle East Technical University  
Ankara, TURKEY
- 1994 - 1997 Computer Supervisor and Network Coordinator  
Department of Environmental Engineering  
Middle East Technical University  
Ankara, TURKEY

## **THESIS**

Gunduz, O. (2004) *Coupled Flow and Contaminant Transport Modeling in Large Watersheds*. Ph.D. Dissertation, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, USA, 467p.

Gunduz, O. (1997). *Development of Water Quality Management Strategies for the Proposed Isikli Reservoir of Ankara Water Supply System*. Master of Science Thesis, Department of Environmental Engineering, Middle East Technical University, Ankara, Turkey, 236p.

## **HONORS**

Ph.D. Scholar (1998)  
Higher Education Council of Turkey

## **AWARDS**

Thesis of the Year (1997)  
Prof. Dr. Mustafa N. Parlar Research and Education Foundation  
Middle East Technical University

HORIZON2020 Project Above-Threshold Award (2016)  
ARTEMAR Project  
The Scientific and Technological Research Council of Turkey

HORIZON2020 Project Above-Threshold Award (2016)  
RESILE-3D Project  
The Scientific and Technological Research Council of Turkey

## **PUBLICATIONS**

### *BOOKS*

Velibeyođlu, K., Özdemir, S., Baba, A., Durmuş Arsan, Z., Duran, E., Kaplan, A., Boyacı, M., Kurucu, Y., Erdoğan, N., Yıldız, Ö., Esetli, T., Gündüz, O. (2016). *Sustainable Development and Life Strategy in Küçük Menderes Basin*, İzmir Metropolitan Municipality, 396p.

### *EDITED BOOKS*

Baba, A., Tayfur, G., Gunduz, O., Howard, K.W.F., Friedel, M.J. and Chambel, A. (2011). *Climate Change and Its Effects on Water Resources*. NATO Science for

Peace and Security Series C: Environmental Security, Springer, 334p. ISBN: 9789400711457.

Karpuzcu, M., Agiralioglu, N., Alpaslan, N., Engin, G., Gomann, H., Gunduz, O., Kocal, M., Oncel, S., Pekdeger, A., Voigt, H., Kuhr, P., Montzka, C., Tetzlaff, B., Vereecken, H. and Wendland, F. (2008). *Integrated Modeling of Nutrients in Selected River Basins of Turkey*. Forschungszentrum Julich GmbH, 183p, ISBN: 978-3-89336-541-8.

Baba, A., Howard, K.W.F. and Gunduz, O. (2006). *Groundwater and Ecosystems*. NATO Science Series: IV: Earth and Environmental Sciences, Springer, 310p. ISBN: 1402047363.

#### *BOOK CHAPTERS:*

Gunduz, O. and Aral, M.M. (2016). *Surface Water – Groundwater Interactions: Integrated Modeling of a Coupled System*, Chapter 54 in Handbook of Applied Hydrology edited by Vijay P. Singh, Mc Graw Hill Inc., pp. 54.1-54.14. ISBN: 978-0071835091.

Gunduz, O. and Aral, M.M. (2005). *Large Scale Hybrid Watershed Modeling*, Section 2: Large Scale Hybrid Models, in Watershed Models edited by V.P. Singh and D.K. Frevert, CRC Press, pp. 75-95. ISBN:0849336090.

#### *JOURNAL PAPERS (SCI):*

Bilgiç, E. and Gündüz, O. (2022). “Radiological modeling of the impacts of the Chernobyl nuclear power plant accident on Turkey and southwest Asia.” *Atmospheric Pollution Research*, Vol: 13, No: 2,101308.

Khorrami, B. Arık, F. and Gündüz, O. (2021). “Land deformation and sinkhole occurrence in response to the fluctuations of groundwater storage: An integrated assessment of GRACE gravity measurements, ICESat/ICESat-2 altimetry data, and hydrologic models” *GIScience & Remote Sensing*, Vol:58, No:8, 1518-1542.

Khorrami, B. and Gündüz, O. (2021). “An Enhanced Water Storage Deficit Index (EWSDI) for drought detection using GRACE gravity estimates” *Journal of Hydrology*, Vol:603, 126812

Bilgiç, E. and Gündüz, O. (2021). “Analysis of the impact of various vertical release patterns on the atmospheric dispersion and total deposition of 137Cs from Chernobyl Nuclear Power Plant accident.” *Environmental Science and Pollution Research*, Vol: 28, No: 47, pp. 66864–66887.

Gündüz, O. and Şimşek, C. (2021). “Assessment of River Alteration Using A New Hydromorphological Index.” *Environmental Monitoring and Assessment*, Vol: 193:226.

Khorrami, B. and Gündüz, O. (2021). “Evaluation of the temporal variations of groundwater storage and its interactions with climatic variables using GRACE data and hydrological models: A study from Turkey.” *Hydrological Processes*, Vol:35, No:3, e14076.

- Khorrami, B. and Gündüz, O. (2020). "Spatio-Temporal Interactions of Surface Urban Heat Island and Its Spectral Indicators: A Case Study from Istanbul Metropolitan Area, Turkey" *Environmental Monitoring and Assessment*, Vol:192, No:6, 386.
- Bilgiç, E. and Gündüz, O. (2020). "Dose and risk estimation of Cs-137 and I-131 released from a hypothetical accident in Akkuyu Nuclear Power Plant", *Journal of Environmental Radioactivity*, Vol:211, No:1, 106082.
- Khorrami, B. and Gunduz, O. (2019). "Analyses of meteorological drought and its impacts on groundwater fluctuations, a case study: Marand Plain (Iran)", *Pamukkale University Journal of Engineering Sciences*, Vol:25, No:6, 711-717.
- Can-Terzi, B., Gunduz, O. and Sofuoglu, S. (2019). "A deterministic and stochastic assessment for exposure and risk of arsenic via ingestion of edible crops", *Environmental Science and Pollution Research*, Vol:26, No:26, 26855-26868.
- Khorrami, B., Gunduz, O., Patel, N., Ghouzlane, S. and Najari, M. (2019). "Land surface temperature anomalies in response to changes in forest cover." *International Journal of Engineering and Geosciences*, Vol:4, No:3, pp. 149-156.
- Baba, A., Gündüz, O., Bakar, C., Sülün, S. and Save D. (2019). "The relation of geogenic and anthropogenic factors with blood and hair lead and arsenic levels in women living in Çan and Bayramiç Districts of Çanakkale Province", *Nobel Medicus*, 15(2): 25-34.
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- Mansour, A.Y.S., Baba, A., Gunduz, O., Şimşek, C., Elçi, A., Murathan, Al., Sözbilir, H. (2017). "Modeling of seawater intrusion in a coastal aquifer of Karaburun Peninsula, western Turkey", *Environmental Earth Sciences*, Vol:76, No:11, 775.
- Gunduz, O., Bakar, C., Simsek, C., Baba, A., Elci, A., Gurleyuk, H. Mutlu, M. and Cakir, A. (2017). "The health risk associated with chronic diseases in villages with high arsenic levels in drinking water supplies", *Exposure and Health*, Vol:9, No:4, pp. 261-273.
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- Fistikoglu, O., Gunduz, O. and Simsek, C. (2016). "The Correlation between Statistically Downscaled Precipitation Data and Groundwater Level Records in north-western Turkey." *Water Resources Management*, Vol. 30, No:15, pp. 5625-5635.
- Baysal, R.T. and Gunduz O. (2016). "The impacts of geothermal fluid discharge on surface water quality with emphasis on arsenic." *Water, Air and Soil Pollution*, Vol:227, No:5, 165.
- Gunduz, O. (2015). "Water quality perspectives in a changing world." *Water Quality, Exposure and Health*, Vol.7, pp. 1-3.
- Gunduz, O., Bakar, C., Simsek, C., Baba, A., Elci, A., Gurleyuk, H. Mutlu, M. and Cakir, A. (2015). "Statistical analysis of death causes during 2005-2010 period in villages with high arsenic levels in drinking water supplies of Simav Plain, Turkey." *Archives of Environmental and Occupational Health*, Vol:70, pp. 35-46.

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- Ak, M. and Gunduz, O. (2014). "Fate of nutrients in secondary treated municipal wastewater during percolation through the soil media." *CLEAN – Soil, Air, Water*, Vol:42(8), pp. 1036-1043.
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- Gunduz, O., Gurleyuk, H., Cakir, A., Elci, A., Baba, A. and Simsek, C. (2013). "Sample collection into sterile vacuum tubes to preserve arsenic speciation in natural water samples." *Journal of Environmental Engineering*, Vol:139, No:8, pp. 1080-1088.
- Okumusoglu, D. and Gunduz, O. (2013). "Hydrochemical status of an acidic mining lake in Çan-Çanakkale, Turkey." *Water Environment Research*, Vol:85, No:7, pp. 604-620.
- Ak, M. and Gunduz, O. (2013). "Comparison of organic matter removal from synthetic and real wastewater in a laboratory scale soil aquifer treatment system." *Water, Air and Soil Pollution*, Vol:224, No:3, 1467.
- Simsek, C., Yavuz, A.B., Elci, H., Elci, A. and Gunduz, O. (2011). "Waste disposal on karstic terrain: a case study from the ancient marble quarries in Iznik (Nicaea), Turkey." *Geosciences Journal*, Vol: 15(3), pp. 339-348.
- Baba, A. and Gunduz, O. (2010). "Effect of alteration zones on water quality: A case study from Biga Peninsula, Turkey." *Archives of Environmental Contamination and Toxicology*, Vol: 58, No:3, pp. 499-513.
- Gunduz, O., Simsek, C. and Hasozbek, A. (2010). "Arsenic pollution in the groundwater of Simav Plain, Turkey: Its impact on water quality and human health". *Water, Air and Soil Pollution*, Vol:205, pp. 43-62.
- Aksoy, N., Simsek, C. and Gunduz, O. (2009). "Groundwater contamination mechanisms in a geothermal field: A case study of Balçova, Turkey". *Journal of Contaminant Hydrology*, Vol.103, No.1-2, pp. 13-28.
- Simsek, C., Elci, A., Gunduz, O. and Erdogan, B. (2008). "Hydrogeological and hydrogeochemical characterization of a karstic mountain region." *Environmental Geology*, Vol. 54, No. 2, pp. 291-308.
- Gunduz, O. (2007). "The influence of streambed hydraulic conductivity on sustaining baseflow in rivers." *Water Science and Technology*, Vol:56, No:1, pp. 259-266.
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- Simsek, C., Kincal, C. and Gunduz, O. (2006). "A solid waste disposal site selection procedure based on groundwater vulnerability mapping." *Environmental Geology*, Vol. 49, No. 4, pp. 620-633.
- Simsek, C., Karaca, Z., Gemici, U. and Gunduz, O. (2005). "The assessment of the impacts of a marble waste site on the water and sediment quality in a river system." *Fresenius Environmental Bulletin*, Vol. 14, No:11, pp. 1013-1023.

- Gunduz, O and Aral, M.M. (2005b). “A Dirac-delta function notation for source/sink terms in groundwater flow.” *Journal of Hydrologic Engineering*, Vol.10, No.5, pp. 420-427.
- Gunduz, O. and Aral, M.M. (2005a). “River networks and groundwater flow: a simultaneous solution of a coupled system.” *Journal of Hydrology*, Vol. 301, No.1-4, pp. 216-234.
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*JOURNAL PAPERS (non-SCI):*

- Bilgic, E. and Gunduz, O. (2019). “Atmospheric dispersion patterns of radionuclides originating from nuclear power plant accidents under various release types”, *International Journal of Energy Production and Management*, Vol:4, No:2, pp. 75-85.
- Tulger Kara, G., Kara, M. ve Gündüz, O. (2017). “Investigation of Küçük Menderes River pollution for persistent organic pollutants and trace elements.” *Çevre\_Bilim ve Teknoloji Teknik Dergi*, Vol: 2, No: 2, 62-75. (in Turkish)
- Eskicioğlu, F. ve Gündüz, O. (2017). “İzmir içme suyu sistemi için “CARVER” yöntemi ile risk analizi”, *Türk Hijyen ve Deneysel Biyoloji Dergisi*, Vol. 74, No. EK-1, 105-112. (in Turkish)
- Bilgiç, E., Tulger Kara, G. and Gündüz, O. (2017). “Assessment of risks for drinking water infrastructures by CARVER Method: Case Study – İzmir”. *SIGMA Journal of Engineering and Natural Sciences*, Vol. 8, No. 3, 199-208.
- Baba, A., Şimşek, C., Solak, O., Gündüz, O., Elçi, A., Murathan, A. ve Sözbilir, H. (2016). “Physical and isotopic characteristics of groundwater in Karaburun Peninsula.” *DSİ Teknik Bülteni*, Vol.120, pp. 14-25. (in Turkish)
- Gunduz, O., Mutlu, M., Elci, A., Simsek, C. and Baba, A. (2012). “The influence of the discharge of geothermal fluid on surface water quality: Case study Simav plain (Kütahya).” *Çevre Bilim ve Teknoloji Teknik Dergi*, Vol. 3, No:4, pp. 231-246. (in Turkish)
- Simsek, C., Gündüz, O. and Elci, A. (2011). “Assessment of environmental quality effects of heavy metal and natural radioactivity from abandoned Balya (Balıkesir) Pb-Zn mine waste.” *Süleyman Demirel University Journal of Engineering Science and Design*, Vol. 2, No. 1, pp. 43-55. (in Turkish)
- Elci, A., Karadas, D. and Gunduz, O. (2009). “Assessment of watershed protection zones with regards to the transport of groundwater pollutants.” *Su Kaynakları Dergisi*, Vol. 1, No. 2, pp. 69-81.
- Simsek, C., Demirkiran, Z., Cetiner, L., Gunduz, O. and Ocal, G. (2009). “Three dimensional interactive hydrogeological model of Kemalpaşa Plain.” *DEÜ Fen ve Mühendislik Dergisi*, Vol: 11, No: 31, pp. 10-21.
- Gunduz, O. and Simsek, C. (2008). “Mechanisms of arsenic contamination of a surficial aquifer in Turkey.” *Groundwater Quality: Securing Groundwater Quality in Urban and Industrial Environments*, IAHS Publ. Vol. 324, pp. 170–177.
- Gunduz, O., Karahan, Ç. and Arıkan, Y. (1995). “Large Dams and Their Environmental Impacts.” *Environment and Engineer*, Vol. 3, No. 8, pp.10-14.

*PEER REVIEWED CONFERENCE PAPERS:*

- Şahin, O.G., Kazancı, Y. ve Gündüz, O. (2022). “Hydrometeorological status and dynamic landuse analysis of Lake Marmara under water stress”, *International Gediz and Aegean River Basins Symposium (GEDIZSYMP2022) Proceedings Book*, 28-29 November 2022, pp. 47-57. (in Turkish)
- Şahin, O.G. ve Gündüz, O. (2022). “Comparative analysis and verification of remotely sensed datasets SMAP and ERA5-LAND with ground stations”, *11<sup>th</sup> International Congress on Hydrology Proceedings Book*, 13-14 October 2022, pp. 681-690 (in Turkish)
- Kazancı, Y., Şahin, O.G. ve Gündüz, O. (2022). “Runoff modeling using hydrological parameters from ERA5-LAND model and artificial neural networks: Case study of Beydağ dam basin”, *11<sup>th</sup> International Congress on Hydrology Proceedings Book*, 13-14 October 2022, pp. 40-49 (in Turkish)
- Önal, O and Gündüz, O. (2022). “3D Modeling of a Historical Mine Waste Site Using UAV Images: Estimation of Stockpile Volumes”, *Third International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering (EGRWSE 2022), Proceedings CD-ROM*, 15-19 September 2022,.
- Sahin, O.G., Tonkul, S. and Gunduz, O. (2022). “Investigating the chemical status of groundwater for irrigation purposes: A case study from a geothermally polluted area (Alaşehir-Turkey)”, *14<sup>th</sup> International Conference on Hydrosience and Engineering*, 26-27 May 2022, *Proceedings Book*, pp. 59-70.
- Kazancı, Y., Karaaslan, Y., Kimençe, T., Çankara, B.F., Okuldaş-Çetin, A., Batuk, S., Fıstıkoğlu, O, Baba, A. and Gunduz, O. (2022). “Mathematical modeling of water quality in a polluted river under point and non-point sources: Case study, Bakırçay River”, *14<sup>th</sup> International Conference on Hydrosience and Engineering*, 26-27 May 2022, *Proceedings Book*, pp. 119-131.
- Zhulal, K., Baba, A. and Gunduz, O. (2022). “Application of GIS-based GALDIT method to assess seawater intrusion of the Karareis Coastal Aquifer (İzmir-Turkey). *14<sup>th</sup> International Conference on Hydrosience and Engineering*, 26-27 May 2022, *Proceedings Book*, pp. 315-327.
- Sahin, O.G., Khorrami, B and Gunduz, O. (2022). “A quantitative comparison of ground-based, satellite-based and model-based precipitation products over Turkey”, *14<sup>th</sup> International Conference on Hydrosience and Engineering*, 26-27 May 2022, *Proceedings Book*, pp. 481-492.
- Bilgiç, E. ve Gündüz, O. (2021). “Analysis of the potential impacts of an hypothetical accident in Metsamor Nuclear Power Plant on Turkey”, *International Conference on Environmental Radioactivity – ENVIRA 2021*, Online.
- Bilgiç, E. ve Gündüz, O. (2021). “Assessment of radiological risks in Turkey associated with a potential accident in Kozloduy Nuclear Power Plant”, In *Proceedings of the 14<sup>th</sup> National and 2<sup>nd</sup> International Environmental Engineering Congress Proceedings Book*, 9-11 December 2021, pp. 439-446. (in Turkish)
- Khorrami, B. ve Gündüz, O. (2021). “Quantitative analysis of surface interpolation techniques used for predicting long-term average total precipitation for Turkey”, In *Proceedings of the 14<sup>th</sup> National and 2<sup>nd</sup> International Environmental*



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- Khorrami, B. and Gündüz, O. (2021). “The GRACE-based assessment of the spatio-temporal variability of terrestrial and ground water storage over Turkey”, In *Proceedings of the 14<sup>th</sup> National and 2<sup>nd</sup> International Environmental Engineering Congress Proceedings Book*, 9-11 December 2021, pp. 193-207. (in Turkish)
- Bilgiç, E., Tuna Tuygun, G. and Gündüz, O. (2021). “Determination of Air Pollution from Wildfires with Satellite Observations”, *International Symposium on Remote Sensing in Meteorology – METEO IRS 2021*, 1-2 December 2021, Online.
- Khorrami, B and Gündüz, O. (2021). “A comparative study on the performance of the GRACE-based WSDI and GDSI indices for drought surveillance over Turkey”, *International Symposium on Remote Sensing in Meteorology – METEO IRS 2021*, 1-2 December 2021, Online.
- Khorrami, B and Gündüz, O. (2021). “Assessment of the temporal associations between groundwater storage variations and climatic variables over Turkey applying GRACE gravimetry data and hydrological model outputs”, *5<sup>th</sup> International Conference on Natural Resources and Sustainable Environmental Management – NRSEM 2021*, Online
- Bilgiç, B. and Gündüz, O. (2019). “Modeling of Atmospheric Transport of Pollutants Released from Izmir Wildfire in 2019”, *Air Quality Conference 2020 - Science and Application*, 18 May 2021, Online.
- Khorrami, B. and Gündüz, O. (2019). “The Application of Remote Sensing and GIS in the Determination and Analysis of Surface Temperature and Urban Heat Island”, *4<sup>th</sup> Meteorological Remote Sensing Symposium (UZALMET2019)*. 11-15 November 2019, Antalya, Turkey. (In Turkish)
- Khorrami, B. and Gündüz, O. (2019). “Enhanced Spatial Variation Pattern of Monthly Precipitation Data Based on Geostatistical Interpolation Techniques. A Case Study from Izmir Province, Turkey”, In *10<sup>th</sup> National Hydrology Congress Proceedings Book, 9-12 Ekim, 2019, Muğla*, pp. 1-13. (in Turkish)
- Bilgiç, B. and Gündüz, O. (2019). “Analysis of the Influence of Different Vertical Release Patterns on the Atmospheric Dispersion of Cs-137 Originating from a Nuclear Power Plant Accident”, *9<sup>th</sup> International Symposium on Atmospheric Sciences ATMOS 2019*, 23-26 October 2019, İstanbul, Turkey, Proceedings CD-ROM.
- Bilgiç, E. and Gündüz, O. (2019). “Assessment of the Impacts of Chernobyl Nuclear Power Plant Accident on Turkey Using Mathematical Modelling Method”, *5<sup>th</sup> International Conference on Environmental Radioactivity*, 8-13 September 2019, Prag-Czech Republic, Proceedings CDROM.
- Bilgiç, E., Tuna Tuygun, G. and Gündüz, O. (2019). “An Integrated Analysis of Dust Transport over Turkey”, *18th World Clean Air Congress*, 23-27 Eylül 2019, İstanbul, Turkey, Proceedings Book.
- Bilgiç, E. and Gündüz, O. (2019). “Dose and risk estimation of Cs-137 and I-131 released from an hypothetical accident in Akkuyu Nuclear Power Plant.” *INSINUME 2019: IN Situ Nuclear METrology as a tool for radioecology Symposium*, 23-26 April 2019, Kuşadası, Proceedings CD-ROM.
- Gündüz, O. and Şimşek, C. (2019). “Geothermal application and environmental problems in Western Anatolia”, *TESKON 2019 14<sup>th</sup> National Mechanical Engineering*

- Congress – Geothermal Energy Symposium*, 18-19-20 April 2019, İzmir, Proceedings Book, pp.142-151. (in Turkish)
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- Polat, N, Bilgiç, E ve Gündüz, O. (2018). “Investigation of the temporal variations of demand and system characteristics in water distribution systems with EPANET.” *International Symposium on Urban Water and Wastewater Management Proceedings Book*, 25-27 October 2018, Denizli (in Turkish).
- Bilgiç, E. and Gündüz, O. (2018). “Can nuclear energy be considered as a viable alternative within the context of global warming?” *7<sup>th</sup> Global Conference on Global Warming (GCGW-2018) Proceedings Book*, June 24-28, 2018, İzmir, Turkey, pp. 237-241.
- Can, B., Gündüz, O. and Sofuoğlu, S. (2018). “Assessment of chronic toxic risks for consumption of edible crops on naturally arsenic contaminated soils.” *International Agriculture, Environment and Health Congress*, 26-28 October 2018, Aydın, Proceedings Book, pp. 457-464.
- Eskicioğlu, F. and Gündüz, O. (2017). “Risk assessment of İzmir Drinking Water System with VSAT Software.” *Proceedings of the 4<sup>th</sup> International Water Congress*, 2-4 November 2017, İzmir, Turkey, pp. 587-598 (in Turkish).
- Polat, N., Bilgiç, E. and Gündüz, O. (2017). “Water management in smart cities”, *Proceedings of the 4<sup>th</sup> International Water Congress*, 2-4 November 2017, İzmir, Turkey, pp. 365-375 (in Turkish).
- Tulger Kara, G., Kara, M. and Gündüz, O. (2017). “Investigation of Küçük Menderes River pollution for persistent organic pollutants and trace elements.” *Proceedings of 12<sup>th</sup> National Environmental Engineering Conference*, 5-7 October 2017, Ankara, Turkey pp. 345-360 (in Turkish).
- Bilgiç, E. and Gündüz, O. (2017). “Atmospheric dispersion and dose/risk estimation of 137Cs released from a potential accident in Akkuyu Nuclear Power Plant, Turkey.” *Proceedings of ATMOS2017 – 8<sup>th</sup> International Atmospheric Sciences Symposium*, 1-4 November 2017, İstanbul, Turkey, pp. 154-157.
- Kentel, E., Gündüz, O., Bayar, M. and Aral, M.M. (2017). “Critical infrastructure management: risk, resilience and extent concepts.” *Proceedings of the 12<sup>th</sup> Conference on Sustainable Development of Energy, Water and Environment Systems*, October 4-8, 2017, Dubrovnik, Croatia, pp. 1-11.
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*Investigation of Arsenic Pollution in the Groundwater of Simav Plain (Kütahya) and Assessment of Human Health Risks*, The Scientific and Technological Research Council of Turkey (TÜBİTAK), Project No: 109Y029, 2009-2012.

*Acidic Mining Lakes and their Influence on Surface and Subsurface Water Quality*, Scientific Research Project (BAP) of Dokuz Eylül University, Project No: 2007.KB.FEN.031, 2008-2009.

*Manisa Municipality Solid Waste Disposal Site Selection Project*. Dokuz Eylül University Project. İzmir, 2008.

*Integrated Modeling of Nutrient Loads and Eutrophication in the Catchment Areas of the Izmit Bay and Tahtalı and Porsuk River Basins, Turkey*, International Project Based on the Bilateral Agreement between The Scientific and Technological Research Council of Turkey (TÜBİTAK), Turkey and Julich Research Center, Germany, Project No: 104I071, 2005 - 2008.

*The Evaluation of Nif Mountain Karstic Aquifer from an Hydrogeological and Environmental Perspective*, The Scientific and Technological Research Council of Turkey (TÜBİTAK), Project No: 104Y290, 2005 - 2007.

*The Assessment of the Mining Activities in Çan Coal Basin from a Medical Geology Perspective*, The Scientific and Technological Research Council of Turkey (TÜBİTAK), Project No: 106Y041, 2006-2008.

*Development of a GIS-Integrated Decision Support System for Solid Waste Disposal Site Selection*, Republic of Turkey State Planning Organization (DPT) Advanced Research Project, Project No: 2003K/120360, 2006-2008.

*Numerical Modeling of Groundwater Flow and Contaminant Transport in Torbali Plain Unconfined Aquifer*, Scientific Research Project (BAP) of Dokuz Eylul University, Project No: 2005.KB.FEN.037, 2005-2007.

*GIS-Integrated Groundwater Quality Management in Tahtalı Basin*, Scientific Research Project (BAP) of Dokuz Eylul University, Project No: 2006.KB.FEN.030, 2007-2008.

*Kuşadası Municipality Solid Waste Landfill Site Rehabilitation Project Preliminary Assessment Study*, Dokuz Eylul University Project, İzmir, 2005.

*Surface and Subsurface Flow and Contaminant Transport Modeling in Lower Altamaha Watershed*, Georgia Sea Grant College Program of National Sea Grant Program, Atlanta, Georgia, 2000-2004.

*Environmental Impact Assessment Study for the Of-Solakli Hydroelectric Power Plant* MAPA Construction and Trade Company, Ankara, 1998.

*Izmir Port Development Project*, Special Assistance for Project Formation (SAPROF) Team, The Overseas Economic Cooperation Fund (OECF) of Japan, Ankara-Izmir, 1998.

*Feasibility Study for Baku-Ceyhan Crude Oil Pipeline* PLE International and BOTAS Inc., Ankara, 1997.

*Environmental Impact Assessment Study for Liquefied Natural Gas Terminals in Turkey* Tractebel Industrie Inc and BOTAS Inc, Ankara, 1997.

*Environmental Impact Assessment Study for the Afsin-Elbistan B Thermal Power Plant* Turkish Electricity Authority, Ankara, 1997.

*A Stream Water Quality Modeling Study for Köroglu Creek - Gerede River System: Impacts of a Tourism Complex on a Water Supply Reservoir*, Köroglu Tourism Inc. and SU/YAPI Engineering and Consulting Inc., Ankara, 1997.

*Assessment of Irrigation Water Quality for the Antalya-Belek Resort Hotel and Golf Club*, Özaltın Construction, Trade and Industry Inc., Ankara, 1996.

*Environmental Impact Assessment Study for the Dilek-Güroluk Hydroelectric Power Plant*, BME Energy Investments and Trade Co. Inc., Ankara, 1995.

*Environmental Impact Assessment Study for the Gerede Alternative of Ankara Water Supply Project* General Directorate of State Hydraulic Works and SU/YAPI Engineering and Consulting Inc., Ankara, 1995.

*Environmental Impact Assessment Study for the Sinanhoca Dam and Hydroelectric Power Plant*, TIMAT Ltd., Ankara, 1994.

*Environmental Impact Assessment Study for the Marmara Ereğlisi Natural Gas-fired Combined Cycle Power Plant*, ENSR Consulting and Engineering Inc., Ankara, 1994.

*Environmental Impact Assessment Study for the Bursa Natural Gas-fired Combined Cycle Power Plant*, Turkish Electricity Authority, Ankara, 1994.

*Wastewater and Stormwater Collection System Design for the Tekel Tobacco Collection Plant located at Kula*, Isitman Engineering Inc., Ankara, 1994.

*Ankara Sewerage Project*, Babbie-Shaw-Morton Int. Ltd., SU/YAPI Engineering and Consulting Inc. and Kentkur Consulting Inc., Ankara, 1993.

## **SHORT COURSES AND WORKSHOPS**

Short Course on Environmental Modeling and Health Risk Analysis, Prof. Dr. Mustafa Aral, 26-28 December 2011, İzmir - Turkey

NATO Advanced Research Workshop (ARW) on Wastewater Resue – Risk Assessment – Decision Making and Environmental Security, 12-16 October 2006, İstanbul - Turkey.

NATO Advanced Study Institute (ASI) on Overexploitation and Contamination of Shared Groundwater Resources: Management, (Bio)Technological and Political Approaches to Avoid Conflicts, 1-12 October 2006, Varna – Bulgaria.

NATO Advanced Research Workshop (ARW) on Groundwater and Ecosystems, 5-7 September 2005, Çanakkale - Turkey.

Workshop on the Use of Treated Domestic Wastewater in Irrigation - MEDAWARE Project, Middle East Technical University, 9-10 June 2005, Ankara - Turkey.

Integrated Urban Environmental Management Project Case Study - LAKE SAPANCA, Institute for Housing and Urban Development Studies in association with General Directorate of Bank of Provinces, May 1997, Ankara - Turkey.

Computing and Internetworking, by Orhan Gunduz, Middle East Technical University, February 1995 and February 1996, Ankara - Turkey.

Seminar on Solid Waste Management and Landfill Design, by Middle East Technical University Department of Environmental Engineering and The Scientific and Technological Council of Turkey, 13-17 May 1996, Ankara - Turkey.

Environmental Impact Assessment Seminar, by General Directorate of State Hydraulic Works, 9-13 October 1995, Aydin - Turkey.

Second National Congress on Ecology and Environment, by the Association of Biologists, 13-11 September 1995, Ankara - Turkey.

Seminar on General Informatics, by MED Campus Program of European Union, June 29 - July 2 1995, Ankara - Turkey.

## **EVENTS ORGANIZED**

Short Course on “Environmental Modeling and Health Risk Analysis” given by Prof. Dr. Mustafa Aral of the School of Civil and Environmental Engineering, Georgia Institute of Technology, USA on 26-28 December 2011 Izmir-Turkey

## **ASSOCIATE EDITOR IN**

Water Quality Exposure and Health  
Turkish Journal of Earth Sciences

## **INVITED AS A REVIEWER IN**

Journal of Hydrology  
Journal of Hydrologic Engineering ASCE  
Advances in Water Resources  
Journal of Irrigation and Drainage Engineering ASCE  
Environmental Geology  
Environmental Monitoring and Assessment  
Water Quality Exposure and Health

## **THESIS SUPERVISED**

### **Ph. D.**

3. Efem BİLGİÇ (2016 - 2022)  
Mathematical modeling of atmospheric dispersion and risk assessment of radionuclides released from nuclear power plant accidents under hypothetical and/or extreme meteorological conditions
2. Behnam KHORRAMI (2017 - 2022)  
Assessment of the Fluctuations of Groundwater Storage through GIS and Remote Sensing Methods
1. Mesut AK (2008 - 2014)  
Determination of quality changes in treated wastewater during percolation through soil media

### **M.Sc.**

9. Saide BATTAL (2019- )

Application of SWAT Model to Bakırçay Watershed for Evaluating Agricultural Pollution Loads on Water Quality

8. Yiğithan KAZANCI (2017 - 2021)  
Surface Water Quality Management for Best Practices – A Case Study from Bakırçay Basin
7. Efem BİLGİÇ (2013 - 2016)  
Atmospheric dispersion of radiation originating from nuclear power plant accidents
6. Fulden ESKİCİOĞLU (2014 - 2019)  
Assessment of critical infrastructure protection: a case study from urban drinking water systems
5. Reyhan Tuğba BAYSAL (2011 - 2016)  
Mathematical modeling of the impacts of geothermal fluid discharge on surface water quality
4. Ayse CAKIR (2010 - 2014)  
Speciation of arsenic in surface and subsurface water resources
3. Nurbol KOKISHEV (2009 - 2010)  
General assessment of surface and subsurface water quality in southern Kazakhstan region
2. Merdiye MUTLU (2007 – 2010)  
Arsenic pollution and health risk assessment in the groundwater of Simav Plain, Turkey
1. Deniz OKUMUSOĞLU (2006 – 2009)  
The investigation of the influence of mining activities on surface and subsurface water quality

**B.Sc.**

26. Hamza BAKAR (2021)
25. Irmak SERTÇELİK (2020)
24. Arzu Yaren ŞEN (2020)
23. Kaan SARIGÜL (2020)
22. Gizem İDAL (2019)
21. Saide BATTAL (2019)
20. Burak ÖZTAŞ (2019)
19. Aysel ATAY (2018)
18. Cennet Çağnur SAKTAŞ (2017)
17. Yiğithan KAZANCI (2017)
16. Ecem KURTULMUŞ (2017)
15. Dilara KARINCA (2014)
14. Fulden Eskicioğlu (2014)

13. Hülya SERBEST (2013)
12. Efem BİLGİÇ (2012)
11. Hakan NUR (2012)
10. Ege YALÇINKAYA (2011)
9. İmran SEVİM (2011)
8. Feray YOLOĞLU (2011)
7. Handan ELPİT (2011)
6. Gülgün ACAR (2010)
5. Melis TOPRAK (2010)
4. Gökçe PEHLİVANER (2010)
3. Duygu ARDENİZ (2009)
2. Aysel ATAY (2008)
1. Sema SOYSAL (2007)

## **OTHERS**

*Language Spoken* : Turkish (mother tongue)  
English (fluent)  
German (poor)

### *Computer Background:*

1. Operating Systems  
WINDOWS XP, 2000, NT, 98, 95, DOS, UNIX
2. Programming Languages  
Basic, Fortran 77, C, C++, C#, Visual Studio
3. Water Quality Modeling Software  
CE-QUAL-W2, QUAL2EU, MODFLOW, SAINTS
4. Miscellaneous  
MS Office2000, Surfer, Grapher, AutoCAD, ArcGIS, MathLab