

## CURRICULUM VITAE OF ŞEBNEM ELÇİ

### *Professor of Civil Engineering*

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## EDUCATION

- **Georgia Institute of Technology, Atlanta, Georgia USA**  
Doctor of Philosophy in Envir. Fluid Mech. and Water Res., July 2004
- **Dokuz Eylül University, İzmir, Turkey**  
Master of Science in Hydrology and Water Resources, February 1998
- **Middle East Technical University, Ankara, Turkey**  
Bachelor of Science in Civil Engineering, July 1995

## HONORS AND AWARDS

- Recipient of the **Marie Curie International Reintegration Grant** given by the European Commission (2005)
- Awarded **Rising Star Trophy** for Research in the Seventh Annual Graduate Student Research Forum of Clemson University (2002)
- Invited as visiting professor to University of California in Davis, CA. (2012)
- Invited as visiting professor to Lund University (2013), Perugia University (2014) and Warsaw University (2014) to give short term lectures via ERASMUS Mobility Programme
- Awarded Scholarship from Norwegian Government for the participation in the International Summer School of University of Oslo (1996)
- Awarded Scholarship from NATO for the participation in the meeting “Modelling Climate change and Its Variability”, in Les Houches, France (June, 1997)

## PROJECTS

- Modelling of Hydrodynamic Circulation in Tahtalı Reservoir and Investigation of Thermal Stratification on Vertical Current Profiles (*Funded by TUBITAK Project No : 104Y323*)
- Investigation of the Effects of Thermal Stratification on Hydrodynamics of a Reservoir (*Funded by European Commission IRG - 28292*)
- Experimental and Theoretical Investigation of Sediment Transport in Unsteady Flows in open Channels - Application of the Results to Tahtali Basin (*Funded by TUBITAK Project No : 106M274*)
- Assesment of Geothermal Energy Applications with the Consideration of Renewal Energy in the Example of Kızıldere Geothermal Power Plant, Denizli and Balcova Geothermal District Heating, Izmir (*Funded by TUBITAK Project No : 104M301*)
- An approach on modification of settling velocities in turbulent flows and investigation of applicability of turbulence models (*Funded by TUBITAK Project No : 114M019*)
- Experimental and Theoretical Investigation of Propagation Of Flood Waves Due To Dam Break—Application To Real Dams In GIS Environment (*Funded by TUBITAK Project No : 110M240*)

- Thermal Modeling of Discharge Water of Manisa Combined Cycle Power Plant (Funded by AKSA Energy)

#### ADMINISTRATIVE DUTIES

- Vice Dean, Engineering Faculty 2011-2015
- Vice Chair, Civil Engineering 2006 – 2007 ; 2008-2011
- Chair, Civil Engineering 2007-2008
- Cooperative Education (COOP) Institute Coordinator, 2013-
- Board Member, Continuous Education Center 2005-2007
- Board Member, Engineering Faculty 2009-2010
- Board Member, Geothermal Energy Research and Application Center 2008–2014

#### PUBLICATIONS IN SCIENTIFIC JOURNALS

1. Güney, M.S., Tayfur, G., Bombar, G., and Elçi, S. "Distorted Physical Model to Study Sudden Partial Dam Break Flows in an Urban Area." *Journal of Hydraulic Engineering*, ASCE, 140 (11), 05014006, 2014.
2. Elçi, Ş. and Ekmekçi, B. 'Observational and Numerical Methods for Quantifying and Modeling of Turbulence in a Stratified Reservoir' *Journal of Applied Fluid Mechanics*, 2015, *accepted and available online* (www.jafmonline.net).
3. Haltaş, İ., Tayfur, G. and Elçi, S. Two-dimensional numerical modeling of flood wave propagation in an urban area due to Ürkmez dam-break, İzmir, Turkey. *Natural Hazards*, (), 1-17. DOI :10.1007/s11069-016-2175-6.
4. Elçi, Ş. and Şimşek, S.E. 'How Do Contaminated Reservoir Bottom Sediments Affect Water Quality? An Assessment Using SWIM Model', *Water Environment Research*, Volume 85, Number 11, November 2013 , pp. 2201-2208(8).
5. Elçi, Ş. and Selçuk, P. 'Effects of Basin Activities and Land Use on Water Quality Trends in Tahtali Basin, Turkey', *Environmental Earth Sciences*. 68:1591–1598, 2013.
6. Work, P.A., Haas, K., Warren, D., and Elçi, S. 'Assessment and Transport of Sediment-Bound Estuarine Contaminants', *Water Qual Expo Health* DOI 10.1007/s12403-013-0101-7, 2013.
7. Bombar, G., Elçi, Ş., Tayfur, G., Güney, M.S., and Bor, A. "Experimental and Numerical Investigation of Bedload Transport Under Unsteady Flows", *Journal of Hydraulic Engineering*, ASCE, 137 (10) 1276-1282, 2011.
8. Bombar, G., Güney, M.S., Tayfur, G and Elçi, S. "Calculation of the time-varying mean velocity by different methods and determination of the turbulence intensities". *Scientific Research and Essays* Vol. 5(6), pp. 572-581, 2010.
9. Elçi, Ş., Aydın, R., and Work, P.A. "Estimation of suspended sediment concentration in rivers using acoustic methods," *Environmental Monitoring and Assessment by Springer*, (159) 255-265, 2009.
10. Elçi, Ş., A. Bor, ve A.Çalışkan, "Utilizing numerical models and acoustic methods to predict reservoir sedimentation", *Lake and Reservoir Management*, North American Lake Management Society, (25) 297-306, 2009.
11. Çalışkan, A., and Elçi, Ş. "Investigation of the hydrodynamics and withdrawal effects in a stratified lake," *Water Resources Management*, (23) 1257-1273, 2009.
12. Elçi, Ş. "Effects of thermal stratification and mixing on reservoir water quality," *Limnology*, 9(2) : 111-123. 2008.
13. Elçi, Ş., Work, P.A., and Hayter, E. "Influence of stratification and shoreline erosion on reservoir sedimentation patterns," *Journal of Hydraulic Engineering, ASCE*, 133 (3) 255-266, 2007.
14. Work, P.A., Guan, J., Hayter, E.J., and Elçi, Ş. "Mesoscale model for morphologic change at tidal inlets. *J. of Waterway, Port, Coastal and Ocean Eng.*, 127(5), ASCE, 282-289, 2001.
15. Sebnem Elci. Estimation of Suspended Sediment Concentration in Stratified Lakes by Acoustic Methods in *Encyclopedia of Lakes and Reservoirs*, Geography, Geology, Bengtsson, Lars;

Herschey, R.W.; Fairbridge, R.W. (Eds.), published by Springer, 2012, 954 p. ISBN 978-1-4020-5616-1.

## **PUBLICATIONS IN INTERNATIONAL PEER-REVIEWED CONFERENCE PROCEEDINGS**

16. Elçi, S. An Approach for Estimating Settling Velocity in Turbulent Flows. Proceedings of the 36<sup>th</sup> IAHR World Congress, The Hague, 28 June- 3 July 2015.
17. Pulat, A., Ata, C., Altınsoy, S. Bombar, G., Elçi, S. Experimental Investigation Of Flow Characteristics Of Discretized Triangular Hydrographs. Proceedings of the 36<sup>th</sup> IAHR World Congress, The Hague, 28 June- 3 July 2015.
18. Elçi, A., Elçi, S. and Boyacıoğlu, 2014. Cooling water discharge impacts to an ephemeral stream: A heat transport modeling study. 11<sup>th</sup> International Conference on Hydrosience & Engineering, Hamburg, Germany. *ICHE 2014, Hamburg - Lehfeldt & Kopmann (eds) - 2014 Bundesanstalt für Wasserbau ISBN 978-3-939230-32-8*, 881-888.
19. Elçi, S. and Tayfur, G. 2014. Advances in the history of reservoir monitoring. Proceedings of IWA Regional Symposium on Water, Wastewater and Environment: Traditions and Culture, Patras, Greece, 22-24 March 2014.
20. Haltaş, İ., Kocaman B., Tayfur, G., Elçi, Ş. Two Dimensional Flood Modeling and Mapping for Porsuk Dam Break. Proceedings of 11<sup>th</sup> International Congress on Advances in Civil Engineering, 21-25 October 2014, Istanbul, Turkey.
21. Work, P.A., Haas, K., Warren, D., Elçi, S. and E. Otay, 2013. Risk analysis for transport of contaminated estuarine sediments. 6th Intl. Perspective on Water Resources and the Environment, ASCE, Izmir, Turkey.
22. Haltaş, I., Elçi, S., and G. Tayfur, 2013. Numerical Simulation of Flood Wave Propagation due to Dambreak., 6th International Perspective on Water Resources and the Environment, İzmir, Turkey.
23. Elçi, Ş. Quantifying Vertical Mixing in Stratified Reservoirs in Proceedings of 10<sup>th</sup> International Congress on Advances in Civil Engineering, 17-19 October 2012, Ankara, Turkey.
24. Haltaş, İ., Tayfur, G. and Elçi, Ş. Numerical Simulation of Flood Wave Propagation due to Dambreak in Proceedings of 10<sup>th</sup> International Congress on Advances in Civil Engineering, 17-19 October 2012, Ankara, Turkey.
25. Güney, M.Ş., G. Tayfur, Ş. Elçi, G. Bombar, and A. Bor, 2009. Experimental and numerical investigation of bed load flux in unsteady open channel flows. Proceedings of the 33rd IAHR Congress, Canada, 2009, 3100-3107.
26. Elçi, Ş., Erdem, A. and G. Gökçen, 2010. Numerical modeling of the effects of Kızıldere Geothermal Power Plant on water quality of the Great Menderes River, Turkey. Proceedings of Fourth International Conference on Water Observation and Information System for Decision Support, BALWOIS 2010 held in Ohrid, Macedonia.
27. Şebnem Elçi and Pelin Selçuk, 2010. Effects of Basin Activities and Landuse on Water Quality Trends in Tahtali Basin. Proceedings of the 9th Int. Congress on Advances in Civil Engineering Conference held in Trabzon, Turkey, 27-30 September, 2010.
28. Aslı Bor, Şebnem Elçi ve Anıl Çalışkan, 2008. Prediction of Sedimentation in Reservoirs by Acoustic Methods. Proceedings of Riverflow Conference, İzmir, 3-5 Eylül 2008, (2), 1251-1263.

29. Anıl Çalışkan and Şebnem Elçi, 2007. Investigation of the hydrodynamic Structure in a Stratified Lake: Tahtali. Proceedings of 32nd Congress of IAH, Venice, Italy. Theme A1.a. Hydrodynamics of lakes and reservoirs Paper #320 16 pages.
30. Şebnem Elçi and Paul A. Work, 2004. Field Observations for Definition of Hydrodynamic Circulation in Hartwell Lake, SC/GA. Proceedings of the 6th Int. Congress on Advances in Civil Engineering, Istanbul, Turkey, 1228-1237.
31. Şebnem Elçi and Paul A. Work, 2003. Numerical Modelling of Hydrodynamic Circulation and Cohesive Sediment Transport in Hartwell Lake, South Carolina/Georgia, USA. Contaminated Sediments: Characterisation, Evaluation, Mitigation/Restoration, Management Strategy Performance, ASTM STP 1442, J. Locat, R. Galvez-Cloutier, R.C. Chaney, and K. Demars, Eds., ASTM International, West Conshohocken, PA, 2003, 296-310.
32. Şebnem Elçi and Paul A. Work, 2003. Prediction Of Reservoir Shoreline Erosion. Proceedings of the 2003 Georgia Water Resources Conference, Athens, GA, 846-850.