Mehmet B. Ercan

ercanm@cec.sc.edu • +90 (551) 795-0700 • mehmetbercan.com
Kumrular Sok. 7/B Namik Kemal Mah. Kizilay • Ankara, Turkey

Research Interests Water Resources, Hydrology, Watershed Modeling, Geographic Information Systems, Uncertainty and Calibration

Education

University of South Carolina, Columbia, SC

Ph.D., Civil Engineering / Water Resources, *Expected by* Feb. 2015

Dissertation Title: *Uncertainty and Calibration of Hydrologic Models*
Committee: Jonathan L. Goodall (Advisor), Michael E. Meadows, Hanif Chaudhry, Venkat Lakshmi

M.S., Civil Engineering / Water Resources, May 2011

Thesis Title: *Estimating Precipitation Input to a Watershed by Combining Gauge and Radar Derived Observations*
Committee: Jonathan L. Goodall (Advisor), Michael E. Meadows, Joseph R. V. Flora

Dumlupinar University, Kutahya, Turkey

B.S., Civil Engineering, Feb. 2005

Experience

Water Resources Engineer Apr. 2015 to Jun. 2016
Arcadis, Indianapolis, IN

I worked as a Hydraulic and Hydrologic modeler in the area of collection and water system modelling. My responsibilities included storm water management, rainfall dependent inflow/infiltration (RDII) reduction plan to mitigate CSO and SSO structures,rainfall studies, flow calibration. For several projects, I focused on development of tools, protocols, and datasets to improve efficiency and quality of the tasks. Because of my expert level prociency in ArcGIS and Python programming, I separately provided GIS support.

Research Assistant Jun. 2009 to Apr. 2015
University of South Carolina, Columbia, SC
Advisor: Jonathan L. Goodall, Ph.D

- Applied SWAT model to the Eno River, North Carolina watershed for understanding hydrological responses with different precipitation estimates
- Created ArcGIS Python script tools for spatial distribution of gauge and radar precipitations on sub-watersheds using Kriging and Average Weighting methods

- Evaluated DDS calibration tool in the Windows Azure Cloud environment and created NSGA-II Python Calibration tool for SWAT models

Control Engineer Feb. 2007 to Sep. 2007

Beton Yapi Denetim Hizmetleri A.S., Ankara, Turkey

- Controlled appropriateness of the steel, concrete mold and concrete to the project for Kentpark Shopping Center construction
- Worked with many other civil, mechanical and electrical engineers and was concerned with all aspects of the structure and its stability before and after pouring concrete

Construction Supervisor June 2006 to Sept. 2006

Basak Insaat Turizm ltd. sti., Mugla, Turkey

- Completed quality inspections and supervised sub-contractors for a construction site consisting of 45 apartments

Refereed Journal Publications

Ercan, M.B. and Goodall, J.L. "Design and implementation of a general software library for using NSGA-II with SWAT for multi-objective model calibration." *Environmental Modelling & Software*, 84: 112–120, 2016.

Ercan, M.B., Goodall, J.L., Castronova, A.M., Humphrey, M. and Beekwilder, N. "Calibration of SWAT models using the Azure Cloud." *Environmental Modelling & Software*, 62: 188–196, 2014.

Ercan, M.B. and Goodall, J.L. "Estimating watershed-scale precipitation by combining gauge- and radar-derived observations." *Journal of Hydrologic Engineering*, 18(8): 983–994, 2013.

Goodall, J.L., Kathleen, D.S., **Ercan, M.B.**, Laura, J.B., Sylvia, M., Haihang, Y., Cecelia and D. Richard, B. "Coupling climate and hydrological models: Interoperability through web services." *Environmental Modelling & Software*, (46): 250–259, 2013.

Castronova, A.M., Goodall, J.L. and **Ercan, M.B.** "Integrated modeling within a hydrologic information system: an OpenMI based approach." *Environmental Modelling & Software*, (39):263–273, 2013.

Papers in Preparation

Ercan, M.B., Goodall, J.L. "Climate change sensitivity analysis on Upper Neuse watershed hydrology."

Ercan, M.B., Lakshmi V., Goodall, J.L. "Comparison of TRMM precipitation with gauge and NEXRAD Precipitations on Upper Neuse watershed using SWAT model."

Conference Proceeding Articles

Ercan, M.B., Goodall, J.L. "A Python tool for multi-gage calibration of SWAT models using the NSGA-II algorithm." In: *Ames, D.P., Quinn, N.W.T., Rizzoli, A.E. (Eds.), Proceedings of the 7th International Congress on Environmental Modelling and Software, June 15-19, San Diego, California, USA.* (4):2325–2331, 2014.

Humphrey, M., Beekwilder, N., Goodall, J.L. and **Ercan, M.B.** "Calibration of watershed models using cloud computing." In: *Proceedings of the 8th International Conference for the Institute of Electrical and Electronics Engineers, June 8-12, Chicago, Illinois, USA.*, (1):1–8, 2012.

Conference Abstracts

Ercan, M.B., Joel, K., Sutton, D., Elliot, D. "Use of ArcPy Library for Validating GIS Networks." *Abstract presented at ESRI User Conference, San Diago, CA*, 27 Jun.–1 Jul., 2016.

Ercan, M.B., Sutton, D., Brittany M. "An ArcGIS Tool for Geographic Address Verification." *Abstract presented at ESRI User Conference, San Diago, CA*, 27 Jun.–1 Jul., 2016.

Shyam P., **Ercan, M.B.**, Sutton, D."Building Physically-Based Urban Hydrologic Runoff Models using ArcPy." *Abstract presented at ESRI User Conference, San Diago, CA*, 27 Jun.–1 Jul., 2016.

Ercan, M.B., Joel, K., Tina W., Rubchinskaya, E. and Sutton, D. "An ArcGIS tool for validating GIS Networks." *Abstract presented at 108th Indiana Section AWWA Anual Conference, Indianapolis, IN*, 25–28 Jan., 2016.

Venkat, L. and **Ercan, M.B.** "Use of TRMM and GPM multi-satellite precipitation data for hydrological modeling." *Presented at JAXA Workshop on the Precipitation Measurement Mission, Tokyo, Japan*, 18–22 Jan., 2016.

Ercan, M.B., Venkat, L., Gail, S.J. and George, J.H. "Use of TRMM and GPM multi-satellite precipitation data for hydrological modeling." *Abstract H13H-1627 presented at 2015 Fall Meeting, AGU, San Francisco, Calif.*, 14–18 Dec., 2015.

Goodall, J.L., **Ercan, M.B.**, Castronova, A.M., Humphrey, M., Beekwilder, N., Steele, J. and Kim, I. "Using the cloud to speed-up calibration of watershed-scale hydrologic models." *Abstract IN51C-04 presented at 2013 Fall Meeting, AGU, San Francisco, Calif.*, 3–7 Dec., 2013.

Saint, K.D.,Goodall, J.L., **Ercan, M.B.**, Rood,R. B., Briley, L.J., Murphy, S., You, H. and DeLuca, C. "An approach to coupled climate-hydrologic interactions that preserves disciplinary communities, infrastructure, and information delivery systems." *Abstract GC41B-1013 presented at 2013 Fall Meeting, AGU, San Francisco, Calif.*, 3–7 Dec., 2013.

Goodall, J.L., Saint, K.D., **Ercan, M.B.**, Briley, L.J., Murphy, S., You, H., DeLuca, C. and Rood,R. B. "Service-oriented approach to coupling Earth System Models and modeling frameworks." *Abstract H41G-1142 presented at 2012 Fall Meeting, AGU, San Francisco, Calif.*, 3–7 Dec., 2012.

Ercan, M.B., Goodall, J.L. "Estimating precipitation input to a watershed by combining gauge and radar derived observations." *Abstract H31N-05 presented at 2011 Fall Meeting, AGU, San Francisco, Calif.*, 5–9 Dec., 2011.

Goodall, J.L., Castronova, A.M., Elag, M. and **Ercan, M.B.** "An integrated modeling environment within the CUAHSI Hydrologic Information System." *Abstract H43B-1237 presented at 2010 Fall Meeting, AGU, San Francisco, Calif.*, 13–17 Dec., 2010.

Professional Memberships

American Society of Civil Engineers (ASCE)
Environmental & Water Resources Institute (EWRI)
American Geophysical Union (AGU)
The International Environmental Modelling & Software Society (iEMSs)

Awards and Honors

iEMSs Best Poster Award 2014
The International Environmental Modelling & Software Society Poster Session

OpenMI Excellence Award 2013
In the use and development of the Open Modelling Interface standard

Travel Award Dec. 2012
To attend AGU Fall Meeting awarded by University of South Carolina (USC) Graduate School

Honorable Mention Apr.2011
USC Graduate Student Day Poster Session

Teaching Experience

Guest Lecturer Fall 2011 and 2012
Advanced Hydrology
University of South Carolina, Columbia, SC
Taught briefly collecting input files and creating SWAT model

Technical Skills

Programing Language

Proficient: Python, C#, LaTex

Experienced: C++, Scilab, Visual Basic, Maple, Fortran, Matlab, JavaScript, HTML/CSS

Software

Proficient: SWAT, ArcGIS, AutoCAD, Microsoft Office (Excel, PowerPoint, Visio, Word)

Experienced: OpenMI, TauDEM, MapWindow, SWMM, VIC

Operating System

Proficient: Microsoft Windows, Linux

Spoken Language

English, Full professional proficiency

Turkish, Native or bilingual proficiency

Kurdish, Limited working proficiency

References

Jonathan L. Goodall

Associate Professor — Phone: 434-243-5019

Civil and Environmental Engineering — E-mail: goodall@virginia.edu

University of Virginia

Michael E. Meadows

Associate Professor — Phone: 803-777-3826

Civil and Environmental Engineering — E-mail: meadows@cec.sc.edu

University of South Carolina

Venkat Lakshmi

Professor — Phone: 803-777-3552

Department of Earth & Ocean Sciences — E-mail: vlakshmi@geol.sc.edu

University of South Carolina