Yagmur Derin

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EDUCATION

PhD, 2019	Civil and Environmental Engineering, University of Connecticut, Storrs CT, USA Thesis Title: "Characterization and Modeling of Satellite-Based Precipitation Uncertainty over Complex Terrain" Advisor: Prof. Dr. Emmanouil Anagnostou
MSc, 2014	Geological Engineering, Middle East Technical University, Ankara, Turkey Thesis Title: "Advancement of Satellite-Based Rainfall Applications for Basin-Scale Hydrologic Modeling" Advisor: Prof. Dr. Koray K. Yilmaz
BSc, 2011	Geological Engineering, Middle East Technical University, Ankara, Turkey Design Project: "Water Supply Design for Industrial Complex in Anamur Plain"

APPOINTMENTS

2019/10-present	**Post-Doctoral Research Assistant Scientist,** University of Oklahoma, Advanced Radar Research Center, Norman, OK *Supervisor:* Prof. Dr. Pierre Kirstetter
2014/08-2019/08	**Graduate Research Assistant**, University of Connecticut, Civil and Environmental Engineering, Storrs, CT *Advisor:* Prof. Dr. Emmanouil Anagnostou
Spring 2018	**Instructor**, University of Connecticut, Civil and Environmental Engineering, Storrs, CT *Course:* Probability and Statistics in Civil Engineering (72 undergraduate students)
Fall 2017	**Teaching Assistant**, University of Connecticut, Civil and Environmental Engineering, Storrs, CT *Course:* Probability and Statistics in Civil Engineering
Spring 2016	**Teaching Assistant**, University of Connecticut, Civil and Environmental Engineering, Storrs, CT *Course:* Environmental Modeling
2011/06 – 2014/06	**Graduate Research Assistant,** Middle East Technical University, Ankara, Turkey *Advisor:* Prof. Dr. Koray K. Yilmaz

GRANTS RECEIVED

Title: *Evaluation of Surface Precipitation Estimates from NASA's Tropical Rainfall Measuring Mission and Global Precipitation Measurement Mission.*
Role: Co-PI
Agency: NASA – GPM Ground Validation
Budget: $70,000.00
Period: 09/2021-08/2022

Title: *Evaluation of Surface Precipitation Estimates from NASA's Tropical Rainfall Measuring Mission and Global Precipitation Measurement Mission.*
Role: Co-PI
Agency: NASA – GPM Ground Validation
Budget: $98,413.00
Period: 06/2020-06/2021

Title: *Enhancing Communities Preparedness and Resilience to Post-Wildfire Hydrology in Mountainous Areas, Round 1.*
Role: Co-PI
Agency: NSF – CIVIC
Budget: $41,287.00
Period: 02/2021-06/2021

Title: *Products to Guide Impact-Based Flash Flood Warnings in the National Weather Service.*
Role: Co-PI
Agency: NOAA – The Joint Technology Transfer Initiative (JTTI)
Budget: $570,664.00
Period: 09/2020-08/2022

AREAS OF RESEARCH INTEREST

- Hydrometeorology, hydrology
- Radar and satellite remote sensing, retrieval, validation and application of precipitation and surface properties.
- Radar meteorology and radar hydrology.
- Precipitation process, microphysics and variability
- Application of remote sensing in hydrology
- Surface water hydrology, land-atmosphere interaction

PUBLICATIONS

Peer-Reviewed Journal Publications

[1] **Derin Y.**, and P. E. Kirstetter: Evaluation of IMERG over CONUS complex terrain using environmental variables. *Submitted to IEEE Geoscience and Remote Sensing Letters*.

[2] **Derin Y**., P. E. Kirstetter and J. J. Gourley: Evaluation of IMERG satellite precipitation over the land-coast-ocean continuum – Part 2: Quantification. *Submitted to Journal of Hydrometerology*.

[3] **Derin Y**., P. E. Kirstetter and J. J. Gourley, 2021: Evaluation of IMERG satellite precipitation over the land-coast-ocean continuum – Part 1: Detection. *Journal of Hydrometeorology,* 22(11), pp. 2843-2859, doi: 10.1175/JHM-D-21-0058.1.

[4] **Derin Y**., E. Anagnostou, Ehsan Bhuiyan, J. Kalogiros, M. Anagnostou, 2020: Modeling Passive Microwave Precipitation Retrieval Error over Complex Terrain using a Nonparametric Statistical Technique, IEEE Transactions on Geoscience and Remote Sensing, DOI: 10.1109/TGRS.2020.3038343.

[5] **Derin Y**., E. Anagnostou, A. Berne, M. Borga, B. Boudevillain, W. Buytaert, C-H. Chang, G. Delrieu, Y. Hong, Y. C. Hsu, W. Lavado-Casimiro, B. Manz, S. Moges, E. I. Nikolopoulos, D. Sahlu, F. Salerno, J-P. Rodríguez-Sánchez, H. J. Vergara and K. K. Yilmaz, 2019: Evaluation of GPM-era Global Satellite Precipitation Products over Multiple Complex Terrain Regions. Remote Sensing, 11(24).

[6] **Derin Y**., E. Anagnostou, M. Anagnostou and J. Kalogiros, 2019: Evaluation of X-Band Dual-Polarization Radar-Rainfall Estimates from OLYMPEX, Journal of Hydrometeroly, 20 (9).

[7] **Derin, Y**., Anagnostou E., Anagnostou M. N., Kalogiros J., Casella D., Marra A. C., Panegrossi G., and Sano P., 2018: Passive Microwave Rainfall Error Analysis Using High-Resolution X-Band Dual-Polarization Radar Observations in Complex Terrain. IEEE Transactions on Geoscience and Remote Sensing, 56:5, 2565-2586; 10.1109/TGRS.2017.2763622

[8] **Derin, Y**., E. Anagnostou, A. Berne, M. Borga, B. Boudevillain, W. Buytaert, C-H. Chang, G. Delrieu, Y. Hong, Y. C. Hsu, W. Lavado-Casimiro, B. Manz, S. Moges, E. I. Nikolopoulos, D. Sahlu, F. Salerno, J-P. Rodríguez-Sánchez, H. J. Vergara and K. K. Yilmaz, 2016: Multi-regional Satellite Precipitation Products Evaluation over Complex Terrain, J. Hydrometeorology, 17, 1817-1836.

[9] **Derin Y**., and K. K. Yilmaz, 2014: Evaluation of multiple satellite-based precipitation products over complex topography, J. Hydrometeorology, 15, 1498–1516.

Book Chapters

[1] **Derin, Y.,** E. Nikolopoulos and M. N. Anagnostou., 2019: Retrieving Extreme Precipitation with Multiple Satellite-based Precipitation Products, Extreme Hydroclimatic Events and Multivariate Hazards in a Changing Climate, Elsevier

[2] Anagnostou., M. N., J. Kalogiros, E. Nikolopoulos**, Y. Derin**, E. N. Anagnostou, and M. Borga, 2016: Satellite Rainfall Error Analysis with the Use of High-Resolution X-Band Dual-Polarization Radar Observations Over the Italian Alps, Perspectives on Atmospheric Sciences, Springer Atmospheric Sciences, DOI 10.1007/978-3-319-35095-0_39

Summary Table

Citations: 322, h-index = 6 (Source: Google Scholar, December 2021)

TEACHING

2018 **University of Connecticut**: Taught CE 2251 Probability and Statistics in Civil Engineering (72 undergraduate students and 1 honor undergraduate student), including developing my own lecture material, quizzes, tests, and final project. Student evaluation available.

2017 **University of Connecticut**: Teaching assistant for Probability and Statistics in Civil Engineering (undergraduate)

2016 **University of Connecticut:** Teaching assistant for Environmental Modeling (undergraduate)

PROFESSIONAL ACTIVITIES AND SERVICE

Committees

2020-2021 American Geophysical Union (AGU), Precipitation Technical Committee Deputy Chair of Award sub-committee

2020- NASA, GPM Blind Zone Working Group, Member

2019-2020 American Geophysical Union (AGU), Precipitation Technical Committee Students and Early Career sub-committee Member

2019- NASA, GPM Particle Size Distribution (PSD) Working Group, Member

2018- NASA, PMM Land Surface Working Group, Member

2015-2019 American Geophysical Union (AGU), Precipitation Technical Committee Student Member

Membership in Professional Societies

2015- American Geophysical Union (AGU)

2012- European Geosciences Union (EGU)

2021- American Meteorological Society

Editor/Reviewer

2021- **Review Editor** for Frontiers Climate

2019- **Review Editor** for MDPI Remote Sensing

2014- **Reviewer** for Journal of Hydrology, Journal of Hydrometerology, Water Resources Research, Remote Sensing of Environment, MDPI Remote Sensing, MDPI Atmosphere, Journal of Applied Meteorology and Climatology, Dynamics of Atmosphere and Oceans, International Journal of Remote Sensing and Remote Sensing Letters

Training/ Workshops

2018/06 The International Workshop on Small Weather Radars (ISWR)
University of Colorado

2013/05 BOOST H20: Hydrogeology Workshop
University of Georgia
Advisors: Prof Adam Milewski and Prof Alan Fryar
Principles and Applications of GIS, Remote Sensing and Hydrological Modeling

2013/06 BOOST H2O: Field training activities in hydrologic science, Iznik Lake, Turkey
Advisors: Prof Adam Milewski and Prof Alan Fryar

Outreach

2021-2022 Volunteer coach of Science Olympiad Remote Sensing Team at Casady Highschool, Oklahoma City, OK.

Awards

2016/02 Pre-Doctoral Fellowship for the Spring 2016, in Civil and Environmental Engineering, University of Connecticut

2013/06 European Geosciences Union (EGU) Hydrological Sciences Outstanding Student Poster (OSP) Award

PRESENTATIONS

Conference/ Meeting Oral Presentations

[1] **Derin Y**., P-E. Kirstetter (2021). Evaluation of Orographic Precipitation for GPM. American Meteorological Society 101st Annual Meeting, January 9-15, 2021.

[2] **Derin Y**., P-E. Kirstetter (2020). Evaluation of IMERGV06B over nontraditional regions using Ground Validation-Multi Radar/Multi-Sensor (GV-MRMS): oceans, American Geophysical Union Fall Meeting, San Francisco, 1-17 December 2020.

[3] **Derin Y.,** P-E. Kirstetter (2020). Evaluation of IMERGV05 and IMERGV06 over CONUS mountainous regions, National Weather Association, Tulsa, 13-17 September 2020.

[4] Derin Y., E. Anagnostou, C. Kummerow, and D. Randel (2018). Characterization of PMW retrieval uncertainty over Complex Terrain. American Geophysical Union Fall Meeting, Washington D.C., 10-14 December 2018.

[5] **Derin Y.,** E. Anagnostou, J. Kalogiros, M. Anagnostou, A. C. Marra, G. Panegrossi, V. Levizzani, E. Cattani, D. Casella and P. Sanò, (2017). Characterization of Passive Microwave Precipitation Retrieval Uncertainty over Complex Terrain, American Geophysical Union Fall Meeting, San Francisco, 11-15 December 2017.

[6] **Derin Y.,** E. Anagnostou, J. Kalogiros, M. Anagnostou, A. C. Marra, G. Panegrossi, V. Levizzani, E. Cattani, D. Casella and P. Sanò, (2016). Passive Microwave Rainfall Error Analysis using High-Resolution X-band Dual-Polarization Radar Observations in Complex Terrain, American Geophysical Union Fall Meeting, San Francisco, 12-16 December 2016.

[7] **Derin, Y**., Anagnostou, E., Berne, A., Borga M., Boudevillain, B., Buytaert, W., Chang, C., Delrieu, G., Hong, Y., Hsu, Y. C., Lavado-Casimiro, W., Manz, B., Moges, S., Nikolopoulos, E. I., Sahlu, D., Salerno, F., Rodríguez-Sánchez, J., Vergara, H. J., Yilmaz, K. K., (2015). Multi-regional Satellite Precipitation Products Evaluation over Complex Terrain, 7th International Workshop for GPM Ground Validation, Seoul, Korea, 12-14 May 2015.

[8] **Derin, Y**., Anagnostou, E., Kalogiros, J., and Anagnostou, M., (2015). Passive Microwave Rainfall Error Analysis using High-Resolution X-band Dual-Polarization Radar Observations in Complex Terrain, European Geosciences Union General Assembly, Vienna, Austria, 12 April – 17 April 2015.

[9] Yilmaz K.K. and **Derin, Y**., (2014). Advancement of Satellite-based Rainfall Applications for Hydrologic Modeling in Topographically Complex Regions, European Geosciences Union General Assembly, Vienna, Austria, 27 April – 02 May 2014.

[10] **Derin, Y.,** Hatipoglu, E., Sunnetci, M. O., Tanyas, H., Ercan, H., Aktuna, Z., Agouridis, C., Fryar, A. E., Milewski, A., Schroeder, P., Ece O. I. and Yilmaz, K. K., BOOST H2O – Field Training Activities for Hydrologic Science near Lake Iznik, Turkey, American Geophysical Union Fall Meeting, San Francisco, 9-13 December 2013.

Conference/Meeting Posters

[1] **Derin Y.,** E. Anagnostou, E. Bhuiyan, M. Anagnostou, J. Kalogiros, (2019). Characterization and Modeling of Satellite-Based Precipitation Uncertainty over Complex Terrain, American Geophysical Union Fall Meeting, San Francisco, 9-13 December 2019

[2] **Derin Y.,** E. Anagnostou, J. Kalogiros, M. Anagnostou, (2019). Analysis of X-Band Dual Polarization Radar Observations over Multiple Complex Terrain, American Geophysical Union Fall Meeting, San Francisco, 9-13 December 2019

[3] **Derin Y.,** E. Anagnostou, J. Kalogiros, M. Anagnostou, A. C. Marra, G. Panegrossi, V. Levizzani, E. Cattani, D. Casella and P. Sanò, (2015). Passive Microwave Rainfall Error Analysis using High-Resolution X-band Dual-Polarization Radar Observations in Complex Terrain, American Geophysical Union Fall Meeting, San Francisco, 14-18 December 2015.

[4] **Derin, Y.,** Milewski, A., Fryar, A. E. and Schroeder, P., (2013) An Integrated Approach for Understanding Anthropogenic and Climatic Impacts on Lakes: A Case study from Lake Iznik, Turkey, American Geophysical Union Fall Meeting, San Francisco, 9-13 December 2013.

[5] **Derin, Y.** and Yilmaz K.K., (2013). Advancement of Satellite-based Rainfall Applications for Hydrologic Modeling in Topographically Complex Regions, American Geophysical Union Fall Meeting, San Francisco, 9-13 December 2013.

[6] **Derin, Y**. and Yilmaz K.K., (2013). Evaluation and Bias Adjustment of Multiple Satellite-based Precipitation Products over Complex Terrain, European Geosciences Union General Assembly, Vienna, Austria, 7 – 12 April 2013.

[7] **Derin, Y.** and Yilmaz K.K., (2012). Evaluation of Multiple Satellite-based Rainfall Products over a Topographically Complex Watershed, European Geosciences Union General Assembly, Vienna, Austria, 22 – 27 April 2012.

TECHNICAL EXPERIENCE

Computer Skills	*Programming Languages*: Proficient: Matlab, Unix Shell Scripting (bash), Python (modules: NumPy, SciPy, matplotlib, Jupyter, Tensorflow, conda and Scikit-Learn) Literate: FORTRAN, R *Hydrologic Modeling Packages:* MIKE SHE, MIKE 11, Visual MODFLOW, SWAT *GIS Packages:* ArcGIS, MapInfo
Foreign Languages	English (TOEFL IBT 96/120) Japanese (Beginner)