Yagmur Derin, Ph.D.

University of Oklahoma, Advanced Radar Research Center, School of Civil Engineering and Environmental Science, National Weather Center, Room 4803, Norman, OK
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https://dryagmurderin.com/ http://www.webofscience.com/wos/author/record/AAE-4909-2021 ORCID

EDUCATION

Storrs, CT — **University of Connecticut, Civil and Environmental Engineering**
PhD, 2019 — *Thesis Title:* "Characterization and Modeling of Satellite-Based Precipitation Uncertainty over Complex Terrain"
Advisor: Prof. Dr. Emmanouil Anagnostou

Ankara, Turkey — **Middle East Technical University (METU), Geological Engineering**
MSc, 2014 — *Thesis Title:* "Advancement of Satellite-Based Rainfall Applications for Basin-Scale Hydrologic Modeling"
Advisor: Prof. Dr. Koray K. Yilmaz

Ankara, Turkey — **Middle East Technical University (METU), Geological Engineering**
BSc, 2011 — *Senior Design Project in Hydrogeology:* "Water Supply Design for Industrial Complex in Anamur Plain"

RESEARCH & PROFESSIONAL EXPERIENCE

Norman, OK — **University of Oklahoma, Advanced Radar Research Center**
Oct. 2019 - present — *Post-Doctoral Research Assistant Scientist*
Supervisor: Prof. Dr. Pierre Kirstetter

Storrs, CT — **University of Connecticut, Civil and Environmental Engineering**
Sept. 2014 – Aug. 2019 — *Graduate Research Assistant*

Storrs, CT — **University of Connecticut, Civil and Environmental Engineering**
Jan. 2018 – May 2018 — *Instructor*
Course: Probability and Statistics in Civil Engineering

Storrs, CT — **University of Connecticut, Civil and Environmental Engineering**
Sep. 2017 – Dec. 2017 — *Teaching Assistant*
Course: Probability and Statistics in Civil Engineering

Storrs, CT — **University of Connecticut, Civil and Environmental Engineering**
Jan. 2016 – May 2016 — *Teaching Assistant*
Course: Environmental Modeling

Ankara, Turkey — **Middle East Technical University (METU), Geological Engineering**
June 2011 – June 2014 — *Graduate Research Assistant*

AWARDS

- 2022, The Office of the Vice President for Research and Partnerships (OVPRP) Match Program in Support of Postdoctoral Researchers Award, University of Oklahoma
- 2022, International Precipitation Working Group (IPWG) Early Career Scientist Award, First Prize for Outstanding Presentation
- 2021, The Office of the Vice President for Research and Partnerships (OVPRP) Match Program in Support of Postdoctoral Researchers Award, University of Oklahoma

- 2016, Pre-Doctoral Fellowship for the Spring 2016, in Civil and Environmental Engineering, University of Connecticut
- 2013, European Geosciences Union (EGU) Hydrological Sciences Outstanding Student Poster (OSP) Award

AREAS OF RESEARCH INTEREST

- Remote sensing of hydrometeorology, and hydrology
- X-band radar retrieval, validation, and application of precipitation
- Satellite remote sensing, retrieval, validation and application of precipitation and surface properties

PUBLICATIONS

Summary Table

Citations: 410, h-index = 7 with 90th Citation Percentile (Source: Web of Science, July 2023)

Table of Journals and Impact Factors (2022)

Journal	# Papers	Impact Factor
AMS, Journal of Hydrometeorology	5	4.871
IEEE, Transactions on Geoscience and Remote Sensing	2	8.125
IEEE, Geosciences and Remote Sensing Letters	1	5.343
AGU, Geophysical Research Letters	1	5.58
MDPI, Remote Sensing	1	5.349

Peer-Reviewed Journal Publications

1. **Derin Y**., and P. E. Kirstetter, 2022: Evaluation of IMERG over CONUS complex terrain using environmental variables. *Geophysical Research Letters,* 49, e2022GL100186. https://doi.org/10.1029/2022GL100186
2. Huang Z., **Y. Derin**, P. E. Kirstetter and Y. Li, 2022: Multi-Graph Convolutional Networks for Rainfall Estimation in Complex Terrain. *IEEE Geoscience Remote Sensing Letters, (Early Online Release)* 10.1109/LGRS.2022.3212644
3. **Derin Y**., P. E. Kirstetter, N. Brauer, J. J. Gourley, and J. Wang, 2022: Evaluation of IMERG satellite precipitation over the land-coast-ocean continuum – Part 2: Quantification. *Journal of Hydrometeorology,* 23(8), pp.1297-1314, doi: https://doi.org/10.1175/JHM-D-21-0234.1.
4. **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.
5. **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.
6. **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).
7. **Derin Y**., E. Anagnostou, M. Anagnostou and J. Kalogiros, 2019: Evaluation of X-Band Dual-Polarization Radar-Rainfall Estimates from OLYMPEX, *Journal of Hydrometeorology*, 20 (9).
8. **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
9. **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, *Journal of Hydrometeorology*, 17, 1817-1836.
10. **Derin Y**., and K. K. Yilmaz, 2014: Evaluation of multiple satellite-based precipitation products over complex topography. *Journal of Hydrometeorology*, 15, 1498–1516.

Book Chapters

11. **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
12. Anagnostou., M. N., J. Kalogiros, E. Nikolopoulos**, Y. Derin**, E. N. Anagnostou, and M. Borga, 2017: 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

GRANTS

In Prep/Revision

- *PI*, Scaling New Heights: Quantification of Orographic Precipitation with Remote Sensing and Numerical weather Modeling. NASA ROSES – Early Career Investigator Program in Earth Science.
- *Co-PI*, Changing characteristics of wildfires and associated impacts on atmospheric feedback: A global analysis with satellite data and models. NASA ROSES - Interdisciplinary Research in Earth Science.

Received

- *Co-PI,* Evaluation of Surface Precipitation Estimates from NASA's Tropical Rainfall Measuring Mission, and Global Precipitation Measurement Mission. NASA – GPM Ground Validation. $80,000.00 (09/2022 – 08/2023)
- *Co-PI,* Evaluation of Surface Precipitation Estimates from NASA's Tropical Rainfall Measuring Mission, and Global Precipitation Measurement Mission. NASA – GPM Ground Validation. $70,000.00 (09/2021 – 08/2022)
- *Co-PI,* Evaluation of Surface Precipitation Estimates from NASA's Tropical Rainfall Measuring Mission, and Global Precipitation Measurement Mission. NASA – GPM Ground Validation. $98,413.00 (06/2020 – 06/2021)
- *Co-PI,* Enhancing Communities Preparedness and Resilience to Post-Wildfire Hydrology in Mountainous Areas, Round 1. NSF – CIVIC. $41,287.00 (02/2021-06/2021)

PRESENTATIONS

Conference/ Meeting Oral Presentations

1. **Derin Y.,** P-E. Kirstetter, D. B. Wolff, D. Faure, N. Gaussiat, and O. Bousquet (2023). Guiding the Improvement of the Global Precipitation Measurement Mission (GPM) with Radar Networks over France and USA mountainous regions. American Meteorological Society Radar Conference, Minneapolis, MN, 28 August-1 September, 2023.
2. Bodine D. J., T. Y. Yu, Y. Wen, A. Alruzuq, P. Kirstetter, **Y. Derin**, L. Shedd, B. K. Cohen, M. Borowski, M. D. Tzeng, E. D. Mullens, S. Mullens, H. B. Bluestein, R. D. Palmer, and B. L. Cheong (2023). The Research and Educational Activities with the Mobile Rapid Scan X-Band Polarimetric (RaXPol) Radar as an NSF Community Instrument Facility. American Meteorological Society Radar Conference, Minneapolis, MN, 28 August-1 September, 2023.
3. **Derin Y.,** and P-E. Kirstetter (2023). Evaluation of IMERG over mountainous regions using environmental variables. 14th International Precipitation Conference (IPC14), Norman, OK, June 05-09, 2023.
4. Gourley, J. J., K. Howards, D. Wasielewski, **Y. Derin**, P-E. Kirstetter, J. A. Duarte, H. Vergara, J. Fulton, and L. Hempel (2023). Development of a mobile, post-wildfire hydrometeorological observatory. American Meteorological Society 103rd Annual Meeting, Denver, January 8-12, 2023.
5. Yu T-Y., Y. Wen, D. J. Bodine, A. Alruzuq, P-E. Kirstetter, **Y. Derin**, L. Shedd, B. Cohen, M. Borowski, M. D. Tzeng, E. D. Mullens, S. Mullens, R. D. Palmer, and B. Cheong (2023). The mobile rapid scan X-Band polarimetric (RaXPol) Radar as a community instrument facility: virtual radar experiment for sea breeze observations to enhance student learning. American Meteorological Society 103rd Annual Meeting, Denver, January 8-12, 2023.
6. **Derin Y.,** and P-E. Kirstetter (2022). Evaluation of IMERG over mountainous regions using environmental variables. American Geophysical Union Fall Meeting, Chicago, December 12-16, 2022.

7. **Derin Y.,** P-E. Kirstetter, I. Kalogiros, M. Anagnostou, E. N. Anagnostou, and J. J. Gourley (2022). Analysis of X-Band Dual Polarization Radar Observations over Multiple Complex Terrain Regions. 11th European conference on Radar in Meteorology and Hydrology, Locarno, Switzerland, August 29 – September 2, 2022.
8. **Derin Y**., P-E. Kirstetter (2022). Evaluation of IMERG over CONUS complex terrain using environmental variables. 10th Workshop on International Precipitation Technical Committee (IPWG) and 6th International Workshop on Space-based Snowfall Measurement (IWSSM) Conference, June 13-17, 2022.
9. **Derin Y**., P-E. Kirstetter (2021). Evaluation of Orographic Precipitation for GPM. American Meteorological Society 101st Annual Meeting, January 9-15, 2021.
10. **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.
11. **Derin Y.,** P-E. Kirstetter (2020). Evaluation of IMERGV05 and IMERGV06 over CONUS mountainous regions, National Weather Association, Tulsa, 13-17 September 2020.
12. **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.
13. **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.
14. **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.
15. **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.
16. **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.
17. 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.
18. **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

19. Gourley J. J., K. Howard, D. Wasielewski, **Y. Derin**, P. Kirstetter, J. A. Duarte, H. Vergara, M. A. Wagner, J. Fulton, and L. Hempel (2023). You're using radars for what!?! Measuring hydrologic responses. American Meteorological Society Radar Conference, Minneapolis, MN, 28 August-1 September, 2023.
20. **Derin Y.,** P-E. Kirstetter, D. B. Wolff, D. Faure, N. Gaussiat, J. V. Baelen and O. Bousquet (2023). Evaluation of orographic precipitation for global precipitation measurement (GPM) mission over mountainous regions using environmental variables. American Meteorological Society 103rd Annual Meeting, Denver, January 8-12, 2023.
21. Gourley J. J., J. Fulton, L. Hempel, H. Beragra, J. Duarte, **Y. Derin**, and P-E. Kirstetter (2022). First results from a mobile, post-wildfire hydrometeorological observatory, American Meteorological Society 30th Conference on Severe Local Storms, Santa Fe, 24-28 October 2022.
22. Kirstetter P-E., D. B. Wolff, **Y. Derin**, D. Faure, N. Gaussiat, V. Petkovic, J. V. Baelen, O. Bousquet, and J. J. Gourley (2022). Guiding the Improvement of the Global Precipitation Measurement Mission with Radar Networks. 11th European conference on Radar in Meteorology and Hydrology, Locarno, Switzerland, August 29 – September 2, 2022.

23. **Derin Y**., P-E. Kirstetter, and J. J. Gourley (2021). Evaluation of IMERGV06B over oceans, coastal areas and mountainous regions using Ground Validation-Multi Radar/Multi-Sensor (GV-MRMS), American Geophysical Union Fall Meeting, New Orleans, 13-17 December 2021.
24. **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
25. **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
26. **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.
27. **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.
28. **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.
29. **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.
30. **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.

TEACHING

2018 **University of Connecticut**: *Instructor* for 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

Conference/Meeting Activities

2023 *Program and Organizing Committee Co-chair*, 14th International Precipitation Conference (IPC14), University of Oklahoma, June 05-09, 2023.

2022 *Session Chair* for Space-Based Precipitation Observations: Innovations for Science and Applications IV, American Geophysical Union Fall Meeting, Chicago, December 12-16, 2022

2022 *Session Chair* for 10th Workshop on International Precipitation Technical Committee (IPWG) and 6th International Workshop on Space-based Snowfall Measurement (IWSSM) Conference, June 13-17, 2022

Workshops/Field Work

2023/05 *Co-chair,* 14th International Precipitation Conference (IPC14) Early Career and Student virtual Workshop, May 24, 2023.

2022/08 *Co-chair*, Workshop on Student-led Weather Radar Experiment in Florida
University of Oklahoma and University of Florida

2022/06 Workshop on Observing the Atmospheric Water Cycle of the Earth
Institut Pascal / University Paris Saclay

2021/04 *Co-chair,* Workshop on Enhancing Communities Preparedness and Resilience to Post-Wildfire Hydrology
University of Oklahoma

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

2014/03 *Led a field trip for my M.Sc. thesis* where I collected data (11 channel cross sections surveyed) from a medium size basin over mountainous terrain (Arac Basin, Turkey)

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

2010/08 *Surveyor:* Evaluating the Economic Value of Environmental Improvements in Göcek Bay, Turkey by Stated Preference Method

Committees

2022 - present *Co-chair*, International Precipitation Working Group (IPWG) Orographic Precipitation Focus Group

2023 - present *Acting Deputy Chair*, American Geophysical Union (AGU), Precipitation Technical Committee of Fall Meeting sub-committee

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

2018 - present *Member,* NASA, PMM Land Surface Working Group

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

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

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

2020 - 2021 *Member*, NASA, GPM Blind Zone Working Group

Outreach

2023 04-06 *Mentor*, Precipitation Measurement Mission (PMM), Global Precipitation Measurement (GPM) Mentorship Program, Mentored a PhD student.
https://gpm.nasa.gov/applications/2022-GPM-mentorship/yagmur-derin

2022 04-06 *Mentor*, Precipitation Measurement Mission (PMM), Global Precipitation Measurement (GPM) Mentorship Program, Mentored a PhD student.
https://gpm.nasa.gov/applications/2022-GPM-mentorship/yagmur-derin

2023/01 *Test Administrator*, Science Olympiad, Pembroke Hill Division C Invitational Tournament, Remote Sensing Test Administrator, Kansas City, January 07, 2023.

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

2022/01 *Test Administrator*, Science Olympiad, Pembroke Hill Division C Invitational Tournament, Remote Sensing Test Administrator, Kansas City, January 08, 2022.

Membership in Professional Societies

2015- American Geophysical Union (AGU)

2012- European Geosciences Union (EGU)

2021- American Meteorological Society (AMS)

2021- Earth Science Women's Network (ESWN)

Editor/Reviewer

2019 **Guest Editor** of the Special Issue on "Evaluation of Remote Sensing and Radar Based Assimilation and Nowcasting for Precipitation and Flood Monitoring", Remote Sensing, MDPI

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

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