Binayak P. Mohanty

MS: 2117 TAMU, Texas A&M University, College Station, Texas 77843; bmohanty@tamu.edu

Professional Preparation

1992	Ph.D.	Soil and Water Engineering, Iowa State University
1987	M.S.	Soil and Water Engineering, Asian Institute of Technology
1985	B.Sc.	Agricultural Engineering, Orissa University of Agriculture and Technology

Appointments

2014-Present	**Regents Professor** and **COALS Chair in Hydrologic Engineering and Sciences**, Texas A&M University
2004-2014	Professor, Departments of Biological and Agricultural Engineering, and Ecosystem Science and Management, Texas A&M University
2001-2004	Associate Professor, Departments of Biological and Agricultural Engineering, and Ecosystem Science and Management, Texas A&M University
1996-2001	Associate Researcher, Department of Environmental Sciences, University of California, Riverside; located at USDA-ARS US Salinity Laboratory

Selected Honors and Awards

2017	Fellow, American Association for the Advancement of Science (AAAS)
2016	Distinguished Alumni Award for Research Excellence, Asian Institute of Technology(AIT), Bangkok
2014	Don and Betty Kirkham Soil Physics Award, Soil Science Society of America (SSSA)
2014	Regents Professor, Texas A&M University System
2014	Inaugural Holder of College of Agriculture and Life Sciences (COALS) Chair in Hydrologic Engineering and Sciences, Texas A&M University
2014	Texas A&M Engineering Experiment Station (TEES) Senior Fellow
2013	NASA Group Achievement Award for a Successful Pre-Launch Field Campaign (SMAPVEX12) in Manitoba, Canada, in Support of SMAP Algorithm and Applications
2012	Fellow, Soil Science Society of America (SSSA) & Agronomy Society of America (ASA)
2012	Fellow, Texas AgriLife Research
1992	Reverend P.T. Taiganides Outstanding Graduate Student Award
1985	University Gold Medal for Outstanding Undergraduate Student

Representative Synergistic Activities

- Founding Director: Texas Water Observatory: Capacity Building in Brazos Corridor (2015-Present)
- Leader: National Soil Hydrology Teams During NASA (Earth Sciences) Field Campaigns including Southern Great Plains SGP (1997), SMEX (2002-2005), CLASIC, and SMAPVEX12 Air-Borne and Space-Borne Soil Moisture Remote Sensing Campaigns.
- Organizing Committee: Gordon Research Conference – Frontier in Science, Flow and Transport in Porous Media (2006-2008), Soils and Critical Zone / Hydrology Sessions in American Geophysical Union Fall Meetings (2004-2014)
- Associate Editor: *Nature* Scientific Reports (2017-); Water Resources Research (2009-2016); Vadose Zone Journal (2008-2016); Journal of Environmental Quality (2001-2007)
- Panelist: US National Academy- Soil Moisture Dynamics (2016); NASA- New Satellite Mission (2016); NASA-ACCESS Panel (2013); NASA-SMAP (2011); DOE Yucca Mountain Infiltration Model Independent Review Panel, 2007-2008; NSF Hydrologic Sciences Grant Panel, 2007, 09, 14
- PI, Co-PI, and Co-I of 35+ Competitive National and International Grants totaling $54 million
- CUAHSI Texas A&M University Representative, 2007-Present
- Member, Organizing Committee, 2014 Texas Water Summit, The Academy of Medicine, Engineering, and Science of Texas (TAMEST) (2013-2014)
- Chairman, Symposium/Workshop on Arid Zone Hydrology under Climate Change Scenarios for the 21st Century, Texas A&M University (2014)
- Chairman, Planning/Organizing Committee for International Conference on "Remote Sensing for Soils", Soil Science Society of America (SSSA) (2014-2016)

Selected Journal Papers (Career Total – 125+)

Mohanty, B. P., and T.H. Skaggs. Spatio-Temporal Evolution and Time-Stable Characteristics of Soil Moisture Within Remote Sensing Footprints with Varying Soil, Slope, and Vegetation. *Advances in Water Resources*. 24(9-10), 1051-1067, 2001.

Zhu, J., and **B.P. Mohanty**. Upscaling of Soil Hydraulic Properties Under Steady State Evaporation and Infiltration. *Water Resources Research*. 38 (9), 10.1029/2001WR000704, 2002.

Mohanty, B.P. and J. Zhu. Effective Averaging Schemes for Hydraulic Parameters in Horizontally and Vertically Heterogeneous Soils. *J. of Hydrometeorology*. 8(4), 715-729, 2007.

Ines, A.V.M. and **B.P. Mohanty**. Near-Surface Soil Moisture Assimilation to Quantify Effective Soil Hydraulic Properties Using Genetic Algorithm. 2. with Air-Borne Remote Sensing During SGP97 and SMEX02. *Water Resources Research*. 44, 10.1029/2007WR007022, 2008.

Das, N.N., **B.P. Mohanty**, and E.G. Njoku. A Markov Chain Monte Carlo Algorithm for Upscaled Soil-Vegetation-Atmosphere-Transfer Modeling to Evaluate Satellite-Based Soil Moisture Measurements. *Water Resources Research*. Doi:10.1029/2007WR006472, 2008.

Das, N.N., **B.P. Mohanty**, E.G. Njoku. Profile Soil Moisture Across Spatial Scales Under Different Hydroclimatic Conditions. *Soil Science*. 175(7):315-319, 2010.

Joshi, C., and **B.P. Mohanty**, Physical Controls of Near-Surface Soil Moisture Across Varying Spatial Scales in an Agricultural Landscape During SMEX02. *Water Resources Research*. 46, doi:10.1029/2010WR009152, 2010.

Jana, R., and **B.P. Mohanty**, A Comparative Study of Multiple Approaches to Soil Hydraulic Parameter Scaling Applied at the Hillslope Scale. *Water Resources Research*. 48, W02520, doi:10.1029/2010WR010185, 2012.

Shin, Y., **B.P. Mohanty**, and A.V.M. Ines, Soil Hydraulic Properties in One-Dimensional Layered Soil Profile Using Layer-Specific Soil Moisture Assimilation Scheme. *Water Resources Research*. 48, W06529, doi:10.1029/2010WR009581, 2012.

Crow, W.T., A. Berg, M.H. Cosh, A. Loew, **B.P. Mohanty**, R. Panciera, P. De Rosnay, D. Ryu, and J. Walker, Upscaling Sparse Ground-Based Soil Moisture Observations for the Validation of Satellite Surface Soil Moisture Products. *Review of Geophysics. 50, RG2002, doi:10.1029/2011RG000372*, 2012.

Ines, A.V.M., **B.P. Mohanty**, and Y. Shin, An Unmixing Algorithm for Remotely Sensed Soil Moisture, *Water Resources Research*. 49, 408–425, doi:10.1029/2012WR012379, 2013.

Gaur, N., and **B.P. Mohanty**, Evolution of Physical Controls for Soil Moisture in Humid and Sub-Humid Watersheds, *Water Resources Research*, 49, 1-15, doi:10.1002/wrcr.20069, 2013.

Shin, Y., and **B.P. Mohanty**, Development of a Deterministic Downscaling Algorithm for Remote Sensing Soil Moisture Footprint Using Soil and Vegetation Classifications. *Water Resources Research*. 49, doi: 10.1002/wrcr.20495, 2013.

Mohanty, B.P. M. Cosh, V. Lakshmi, and C. Montzka, Remote Sensing for Vadose Zone Hydrology – A Synthesis from the Vantage Point. *Vadose Zone Journal*. doi:10.2136/vzj2013.07.0128, 2013.

Mohanty, B.P., Soil Hydraulic Property Estimation Using Remote Sensing: A Review, *Vadose Zone Journal*., doi:10.2136/vzj2013.07.0128, 2013.

Neelam, M., and **B.P. Mohanty**, Global Sensitivity Analysis of the Radiative Transfer Model, *Water Resources Research*. doi 10.1002/2014WR016534, 2015.

Kim, J., and **B.P. Mohanty**, Influence of Lateral Subsurface Flow and Connectivity on Soil Water Storage in Land Surface Modeling, *Journal of Geophysical Research -Atmosphere*. 121, doi:10.1002/2015JD024067, 2015, 2016.

Mohanty, B.P., M. Cosh, V. Lakshmi, and C. Montzka, Soil Moisture Remote Sensing – State-of-the-Science, *Vadose Zone Journal*. doi:10.2136/vzj2016.10.0105, 2017.

Kathuria, D., **B.P. Mohanty**, and M. Katzfuss, A Non-Stationary Geostatistical Framework for Soil Moisture Prediction in the Presence of Heterogeneity, *Water Resources Research*. 55, doi:10.1029/2018WR023505, 2019.