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1. Biography

Citizenship: Naturalized US citizen (2003)

Education

PhD	University of Washington, Seattle (Civil Engineering – major in Hydrology, minor in Atmospheric Sciences)
MSc	Oregon Graduate Institute of Science and Technology, OUSH (Environmental Science and Engineering)
MSc	University of Porto, Portugal (Hydraulics - Ocean Engineering)
Diploma	University of Porto, Portugal (Civil Engineering, 5-year degree, double major in Structures and Hydraulics)

Professional Appointments

2018- Edmund T. Pratt, Jr. School Professor of Civil and Environmental Engineering
2015 - 2018 James L. Meriam Professor of Civil and Env. Engineering, Duke University
2013 - Professor, Earth & Ocean Sciences, Nicholas School of the Environ., Duke Univ.
2011 - 2015 Senior Fellow, Energy and Climate Partnership of the Americas, US Dep. of State
2011 - 2016 Founding Director, Karsh International Scholars Program, Duke University
2004 - 2015 Professor, Civil & Env. Eng., Pratt School of Engineering, Duke University
1999 - 2004 Associate Professor, Div. Eng. & Appl. Sciences, Harvard University
1998 - 1999 Associate Professor, Civil and Env. Eng., Penn State University
Faculty Affiliate Earth System Science Center, Penn State University
Environmental Resources Institute, Penn State University
1993 - 1998 Assistant Professor, Civil and Env. Eng., Penn State University

Selected Honors and Awards

Elected Member, National Academy of Engineering, 2019
Fellow, American Association for the Advancement of Science, 2017
Fellow, American Society of Civil Engineers, 2016
Distinguished Professorship, Duke University, 2015
NASA Group Achievement Award – GPM Post-Launch Team, 2015
NASA GSFC Robert H. Goddard Award (GPM GV Team), 2015
Category of Exceptional Achievement in Science
Fellow, American Geophysical Union, 2014
AMS Sigma-Xi Distinguished Lecturer 2014-2015

WIMEK Research Fellowship, 2013
Editors' Citation for Excellence in Refereeing for Reviews of Geophysics- 2011
Fellow, American Meteorological Society, 2008
Senior Member, IEEE, 2004
Distinguished Lecturer, Texas A&M University, Spring 2003
George W. Merck Faculty Fellow, Harvard University, 1999-2003
NASA New Investigator Award- MTPE, 1996
National Science Foundation CAREER Award, 1995
Lorenz G. Straub Award, 1993
for most meritorious Ph.D. thesis in Hydraulics and related fields.
Science Scholarship, JNICT, 1991
EOS Global Climate Change Fellowship, NASA, 1990
Prize Foundation A. Almeida, 1985
Award for the top student graduating with the Diploma in Civil Engineering in Portugal
Honor Societies –Chi Epsilon, Sigma Chi

Research Interests

Orographic cloud and precipitation processes; precipitation microphysics; climate, meteorology and hydrology of mountainous areas; regional aspects of the water cycle, climate change and variability; scaling processes in hydrology and hydrometeorology; land-atmosphere interactions; vegetation dynamics; soils-vegetation-hydrology interactions in land-margin environments; remote-sensing (retrieval algorithms and data integration) of soil moisture, snowpack, precipitation and clouds; environmental physics and transport phenomena in interface environments; complex systems and predictability; hydrometeorological forecasting and information technology; extreme events, risk assessment and life-line infrastructure; land-use and land-cover and environmental change; engineering sustainability and adaptation. Sensors and sensing systems.

Professional Societies

American Society of Civil Engineers, 1994- (P.E., Fellow 2016)
Institute of Electrical and Electronics Engineers, 2004- (Senior Member, 2004)
Portuguese Order of Engineers, 1986 – (Professional Civil Engineer Reg. No. 20807)
American Geophysical Union, 1987- (Fellow 2014)
Chi Epsilon, 1991
American Meteorological Society, 1991- (Fellow 2008)
European Geophysical Union, 1992-
American Society for Engineering Education, 1993-2005
American Water Resources Association, 1994-1999
American Association for the Advancement of Science, 1997- (Fellow 2017)
American Association of Environmental Engineering Professors, 1994-1997, 2018-

2. Service

Editorial Service

AGU Advances, Editor, 2019-

Associate Editor, IEEE J-STARS, 2016-2019

Associate Editor, Journal of Hydrology (Elsevier), 2000-2016

Chief Editor, AMS Journal of Hydrometeorology, 2007-2011

Scientific Editor, Meteorology and Hydrology, EGS-NHESS, 2000-2012

Editorial Board, Advances in Water Resources, 2004-2007

Editor, Hydrology and Earth Systems Science, 2004-2007

Earth Interactions, Editorial Advisory Board, 2001

Service to US Government Agencies and International Organizations

NASA Aerosol - Clouds, Convection and Precipitation US Science Community Cohort, 2018-

USRA Earth Science Council, 2018-2021

NOAA- NWS Community Advisory Committee for Water Prediction, 2018-2021

NASA MSFC Global Hydrology Resource Center DAAC, Advisory Committee, 2017-2019

NOAA/CPO Earth System Science and Modeling Council, Chair, 2017-

NRC NASA ESAS Decadal Survey, Water Cycle Panel, Co-Chair 2016-2017

NOAA Cooperative Institute Review Panel, CIRES, UC-Boulder, 2016

NASA Earth Sciences Senior Review, 2011, 2013, 2015

GEWEX/WCRP, North American RHP, 2014-

NOAA National Severe Storms Laboratory Science Review Panel, 2015

Advisory Board, Lisbon Ph.D. School in Earth Sciences, 2013-2018

DoE ARM Review committee, 2014

NSF PDM-HS Steering Committee, 2013 -2014

WMO- Task Team High Impact Weather Project, 2013-2014

DoE ARM Science Board, 2013 and 2014

DoE CoV Office of Biological and Environmental Research, 2013

US National Hydrology Committee for the International Hydrology Programme 2006-2010

DoE CoV Office of Biological and Environmental Research, 2010

NOAA Cooperative Institute for Climate and Satellites, Affiliate, 2010-

NRC/BPA Committee on Radio Frequencies, 2007-2010

NRC/BASC Climate Research Committee, 2007-2010

NCAR CISL High Performance Computing Advisory Panel, 10/2007-9/2010

NAS/ Advisory Mission to the Government of Chile, September-October 2008

NASA Snow and Cold Processes Measurement Mission, Science Advisory Panel, 2007

NSF, Chair of Site Visit and Renewal Panel, National Center Earth Surface Dynamics, 2006

NRC/SSB, Committee for the Review of NASA Science Mission Directorate Science Plan, 2006

NRC/BASC GAPP Review Committee, 2005

NRC/SSB, Committee on the Scientific Context for Space Exploration (2004-2005)

NRC, Space Studies Board, 2002-2005 (Exc. Com. 2004-2005)

NRC/BASC Sulphur Mountain Radar Committee 2004

NOAA-OGP Regional Reanalysis Science Advisory Committee, 2000 -

NASA- Earth System Satellite Program, Science Selection Panel, 2001, 2002

NOAA, Global and Climate Change Advisory Panel, 1997-2002

NRC, USGS Committee on Water Resources, 1996-2001

NASA Global Water and Energy Cycle Initiative Science Plan Working Group, 2001-

NASA Soil Moisture Working Group, 1999 -

NSF CMS-CAREER Assessment Committee, 1997-1998

CUAHSI, Executive Committee, CUAHSI, 2000-2001 (Founding Member)

Cambridge Public Schools – Science Advisory Committee, 2002

Research Panels /Site Reviews - EU, NERC-UK, CREF-CA, and numerous NSF, NOAA and NASA research proposal review panels

Service to Professional Societies

AGU, President-Elect Hydrology Section, 2019-2020; President 2021-2022

Chair, AGU Hydrology Section Fellows Committee, 2019-2020
AAAS, Elected Chair, Atmospheric and Hydrospheric Sciences, 2018-2020
AMS, 2020 Annual Meeting Program Committee, 2018-2020
AMS Fellows Committee, 2016-2019

AGU College of Fellows Task Force, Chair, 2016-2017

ASCE Committee on Adaptation to Climate Change, 2011-
(Vice-Chair, 2016-2017; Chair 2017-2018)

ASCE, Advisory Board, International Symposium on Weather radar and Hydrology, 2014

AAAS, Elected W Section Committee MaL, 2013-2016

AGU Horton Medal Committee, 2013-2014

AGU, Geophysical Research Letters, Editorial Board Search Committee, 2003-2006

AGU, Langbein Lecture Committee, 2009-2011

AGU, Precipitation Committee, 1993-2009

AGU, Hydrology Section Nomination Committee, 2011-2012

AGU, Large-Scale Field Experiments Committee, 2014-

AMS, Council Member (elected), 2002-2005

AMS, Planning Commission, 2005

AMS, Annual Meeting Program Committee, 2005-2008

AMS, Council Nominations Committee, 2005-2008

AMS, Ad-Hoc Committee on Public-Private Partnerships, 2003-2005

AMS, Hydrology Committee, 1995-1998, 2000-2003

AMS APT Committee on Integrated Water Resources, Co-Chair, 2011- 2014

AMS, Program Committee - 13th Conference on Hydrology, 77th Annual Meeting, 1997

AWRA Board Pennsylvania (1994-1996), President (1995)

Organizing Committee, KOS2013 Conference - Facets of Uncertainty,2013

Program Committee - 13th Conference on Hydrology, 77th Annual Meeting AMS, 1997

Program Committee, 12th International Precipitation Conference, 2019

Program Committee, 11th International Precipitation Conference, 2013

Program Committee, International Precipitation Conference, 2007, 2010

Chair, 7th International Precipitation Conference, (1998-2001)

University Service

Duke University

Engineering Faculty Council, 2018-2020

Dean Search Committee, Nicholas School, 2017-2018

Chair and Member, multiple Pratt and NSOE Search and APT Committees 2004 -

Chair, Pratt School of Engineering Budget Advisory Committee, 2016 -2017

Duke ONRL Research Challenge Faculty Mentor, 2015-2016

Pratt's Budget Advisory Committee, 2015-2016

Presidential Committee on Facilities & Environment, 2015-2018

Provost's Appointments, Promotion and Tenure Committee, 2012-2015

Provost's Committee on Interdisciplinary Initiatives, 2010-2011

Provost's Global Priorities Committee, 2011-2013

Founding Director, Karsh International Scholars Program, 2011-2016

SHEP Faculty Advisor, 2007- 2012, 2015-2018

President's Standing Committee on University Priorities, 2008-2010

Provost's Faculty Diversity Standing Committee, 2008-2011

Academic Council & Executive Committee, 2008-2010

Founding Director, Engineering Frontiers, FOCUS Program, 2005-2010

Dean's APT Committee, Pratt School of Engineering - 2006-2010

Dean Search Committee, Pratt School, 2007-2008

Dean Search Committee, Nicholas School, 2006-2007

Provost's Committee on Undergraduate Admissions & Financial Aid, 2006-2009

Engineering Faculty Council, 2005-2007

Elsewhere

Faculty Council, Arts and Sciences, Harvard University

Graduate Faculty Council, Graduate School, Penn State University

WISE Faculty Advisor, Penn State University

3. Research

Large Research Campaigns – MOHPREX 2001 (Lead PI); NAME (co-I), SMEX04 (co-PI), CLASIC 2007 (co-PI), TIGERZ/JAMEX09 (co-PI), GCPEX (Participant), IPHEX 2014 (Lead Scientist), CAPRICORN (Participant)

Peer-Reviewed Journal Publications [* advisee student or postdoc, $senior PI/corresponding author/significant independent contribution in multi-author paper, + Graduate Advisor]

- *Submitted, In review, Accepted*

Protat$, A.; Klepp,C.; Louf,V.; Petersen, W.; Alexander, S.P.; Barros, A.P.; Leinonen, J., and Mace, G.G., 2019a: Why is Satellite Rainfall Going South South of 40ºS and North of 40ºN? Part 1: The Latitudinal Variability of Drop Size Distribution Properties. *J. Geophysical Research Atmos.*, in review.

Protat$, A.; Klepp,C.; Louf,V.; Petersen, W.; Alexander, S.P.; Barros, A.P.; Leinonen, J., and Mace, G.G., 2019b: Why is Satellite Rainfall Going South South of 40ºS and North of 40ºN? Part 2: The Relationships between Radar Observables and Drop Size Distribution Parameters. *J. Geophysical Research Atmos.*, in review.

Ruti$, P., Tarasova, O., Keller, J., Carmichael, G., Hov, O., Jones, S., Terblanche, D., Anderson-Lefale, C., Barros, A.P., 2018: Advancing Research for Seamless Prediction. *Bull. Amer. Meteor. Soc.*, pending revisions.

Eghdami*, M, and Barros, A.P.$, 2018: Vertical Scaling Behavior of Orographic Wind and Moisture Fields in Atmospheric Models. *Earth and Space Science*, in review.

- *Published, In press*

Eghdami*, M., and Barros$, A.P., 2019: Extreme orographic rainfall tied to Cold Air Intrusions in the eastern Andes. *Frontiers in Earth Sciences*, in press.

Arulraj*, M., and Barros$, A.P., 2019: Improving Quantitative Precipitation Estimates in Mountainous Regions by Modeling Low Level Seeder-Feeder Interactions constrained by GPM DPR Measurements. *Rem. Sen.of the Environ.*, 231, 111213, 10.1016/j.rse.2019.111213.

Aide$, M.T., Garu R.H., Graesser, J., Andrade-Nuñez, M.J., Araoz E., Barros, A.P., and many others, 2019: Woody vegetation dynamics in the Andes from 2001 to 2014: the impacts of land use change and climate. *Global Change Biology*, 1-15, DoI:10.1111/gcb.14618.

Tao*, J., and Barros$, A.P., 2019: Multi-Year Surface Radiative Properties and Vegetation Parameters for Hydrologic Modeling in Regions of Complex Terrain – Methodology and Evaluation over the IPHEx2014 Domain. *J. Hydrology-Reg. Studies*, 22, DoI:10.1016/j.ejrh.2019.100596.

Miller[$],D., Miniat,C.F., Wooten, R., and Barros, A.P., 2019: An Expanded Investigation of Atmospheric Rivers in the Southern Appalachian Mountains and their Connection to Landslides. *Atmosphere*, *10*, 71; DoI:10.3390/atmos10020071.

Duan*, Y**.**, Petters, M. D., and Barros[$], A. P. ,2019. Understanding aerosol-cloud interactions through modelling the development of orographic cumulus congestus during IPHEx, *Atmos. Chem. Phys.*, 19, 1-25, DoI:10.5194/acp-19-1-2019.

Lowman, L.*, Wei, T.*, Barros, A.P[$]., 2018: Rainfall Variability, Wetland Persistence, and Water-Carbon Cycle Coupling in the Upper Zambezi River Basin in Southern Africa., *Remote Sensing*, *10*(5), 692; DoI:10.3390/rs10050692.

Eghdami*, M.,Bhushan, S., and Barros[$], A.P., 2018: Direct numerical simulations to investigate energy transfer between meso- and synoptic scales. *J.Atmos.Sci.,* DoI: 10.1175/JAS-D-17-0216.1.

Lowman*, L., and Barros, A.P., 2018: Predicting Canopy Biophysical Properties and GPP Sensitivity to Water-limiting Conditions using a Coupled Eco-Hydrologic Framework. *Ecol. Modelling*,DoI:10.1016/j.ecolmodel.2018.01.011.

Duan*, Y**.**, Petters, M. D., and Barros, A. P. ,2017. Understanding aerosol-cloud interactions in the development of orographic cumulus congestus during IPHEx, *Atmos. Chem. Phys. Discuss.*, DoI:10.5194/acp-2017-396.

Duan*,Y.,and Barros, A.P., 2017: Understanding how low-level clouds and fog modify the diurnal cycle of orographic precipitation using *in situ* and satellite observations. *Remote Sensing*, *9*(9), 920; DoI:10.3390/rs9090920.

Barros, A.P., Hodes*, J., and Arulraj*, M. 2017: Decadal Climate Variability and the Spatial Organization of Deep Hydrological Drought. *Env.Res.Letters, DoI:*10.1088/1748-9326/aa81de.

Arulraj*, M. and Barros, A. P., 2017: Shallow Precipitation Detection and Classification Using Multifrequency Radar Observations and Model Simulations. *J. Atmos. Ocean. Tech.*,10.1175/JTECH-D-17-0060.1

Wilson*, A. M. and Barros, A.P., 2017: Orographic Land-Atmosphere Interactions and the Diurnal Cycle of Low level Clouds and Fog. *J. Hydrometeorology*, 10.1175/JHM-D-16-0186.1.

Tao*, J., and Barros, A.P., 2017: Multi-Year Atmospheric Forcing Datasets for Hydrologic Modeling in Regions of Complex Terrain – Methodology an Evaluation of over the IPHEx2014 Domain. *J. Hydrol.*, 10.1016/j.jhydrol.2016.12.058.

Kang*, D.-H., Barros, A.P, Kim, E., 2016: Evaluating Multi-Spectral Snowpack Reflectivity With Changing Snow Grain Sizes. *IEEE TGRSS*, 10.1109/TGRS.2016.2600958.

Lowman*,L.E.L, and Barros, A.P., 2016: Interplay of Drought and Tropical Cyclone Activity in SE US Gross Primary Productivity. *J.G.R.- Biogeo*sciences,10.1002/2015JG003279.

Tao*, J., Wu, D., Gourley, J., Zhang, S.Q., Crow, W., Peters-Lidard, C.,and Barros, A.P[$]., 2016: Operational Hydrological Forecasting during the IPHEx-IOP Campaign- Meet the Challenge. *J. Hydrology*, 10.1016/j.jhydrol.2016.02.019.

Wilson*, A. M., and Barros, A.P., 2015: Landform Controls on Low Level Moisture Convergence and the Diurnal Cycle of Warm Season Orographic Rainfall in the Southern Appalachians, *J. Hydrol*., Vol. 531 (2), 475-493. DoI:10.1016/j.jhydrol.2015.10.068.

Nogueira*, M., and Barros, A.P., 2015: Transient Stochastic Downscaling of Quantitative Precipitation Estimates for Hydrological Applications. *J. Hydrology*, No. 529, 1407-1421. DoI:10.1016/j.jhydrol.2015.08.041.

Sun*, X.,and Barros, A. P., 2015: Impact of Amazonia evapotranspiration on moisture transport and convection along the eastern flanks of the Andes. *Q.J.R. Meteorol. Soc.,* DoI: 10.1002/qj.2615.

Dimri, A.P., Niyogi, D., Barros, A.P., Ridley, J., Mohanty, U.C., Yasunari, T., Sikka, D.R., 2015: Western Disturbance(s): a Review. *Reviews of Geophysics*, DoI:10.1002/2014RG000460.

Duan*, Y., Wilson*, A.M., and Barros, A.P., 2015: Scoping a Field Experiment: Error Diagnostics of TRMM Precipitation Radar Estimates in Complex Terrain as a basis for IPHEx2014. *Hydrol. Earth Sys. Sci.*, 19,1501-1520 Doi:10.5194/hess-19-1501-2015.

Angulo-Martinez*, M, and Barros, A.P., 2015: Measurement Uncertainty in rainfall kinetic energy and intensity relationships for soil erosion studies: an evaluation using PARSIVEL disdrometers in the Southern Appalachian Mountains. *Geomorphology*, 228, 28-40,DoI:10.1016/j.geomorph.2014.07.036.

Sun*, X., and Barros, A.P., 2015: Isolating the Role of surface evapotranspiration on moist convection and cloud formation along the eastern flanks of the Andes using a quasi-idealized approach. J. *Atmos. Sciences*, DoI:10.1175/JAS-D-14-048.

Nogueira*, M., and Barros, A.P., 2014: The non-convective/convective structural transition in stochastic scaling of atmospheric fields. *J. Geophys. Res- Atmos*., 119, DoI: 10.1002/2014JD022548.

Band, L., McDonnell, J., Barros, A., Bejan, A., Burt, T., Dietrich, W., Emanuel, R., Duncan, J., Hwang, T., Katul, G. Kim, Y., McGlynn, B., Miles, B., Porporato, A., Scaife, C., Troch, P., 2014: Ecohydrological flow networks in the subsurface. *Ecohydrology,* 7,1073-1078.

Erlingis*, J. M. and Barros, A.P., 2014: A case study of the role of daytime land-atmosphere interactions on nocturnal convective activity in the Southern Great Plains during CLASIC. *J. Hydromet.*, Vol.15, 5, 1932-1953, DoI:10.1175/jhm-d-14-00161.

Lowman*, L. E.L., and Barros, A.P., 2014: Investigating Links between Climate and Orogeny in the central Andes: Coupling Erosion and Precipitation using a Physical-Statistical Model. *J. Geophys. Res- Earth Surface*, 119,1-32.

Wilson*, A. M., and Barros, A.P., 2014: An investigation of warm rainfall microphysics in the Southern Appalachians: orographic enhancement via low-level seeder-feeder interactions. *J. Atmos. Sci*., Vol. 5, No.5, 1783-1805.

Barros, A.P., Duan*, Y., Brun*, J., Medina, M.A., 2014: Flood Nonstationarity in the SE and Mid-Atlantic Regions of the United States. *J. Hydrologic Engineering*, DOI:(ASCE)HE.1943-5584.0000955.

Tao*, J. and Barros, A.P., 2014: Coupled Prediction of flood response and debris flows initiation during warm and cold season events in the Southern Appalachians, USA. *Hydrol. and Earth System Sciences*. DOI:10.5194/hess-18-1-2014.

Brun*, J. and Barros, A.P., 2014: Mapping the Role of Tropical Cyclones on the Hydroclimate of the southeast United States: 2002-2011*, Int. J. of Climatology*, DOI:10.1002/joc.3703.

Sun*, X., and Barros, A.P., 2013: High resolution simulation of Tropical Storm Ivan (2004) in the Southern Appalachians: Role of Planetary boundary layer schemes and cumulus parameterization. *Q.J.R. Meteorol. Soc.*, DOI:10.1002/qj.2255.

Nogueira*, M., Barros$, A.P., Miranda, P., 2013: Multifractal properties of embedded convective structures in orographic precipitation: toward subgrid-scale predictability. *Nonlinear Processes in Geophysics*, 20, 1-17, DOI:10.5194/npg-20-1-2013.

Tao*, J, and Barros, A. P., 2013: Prospects for Flash Flood Forecasting In Mountainous Regions-An Investigation of Tropical Storm Fay in the Southern Appalachians. *J. Hydrology*, DOI:10.1016/j.jhydrol.2013.02.052.

Kang*, D.K., Barros$, A.P., Dery, S..J., 2013: Evaluating Passive Microwave Radiometry for the Dynamical Transition from Dry to Wet Snowpacks. *IEEE TGRSS*, DOI: 10.1109/TGRS.2012.2234468.

Li, L., Li, W., and Barros, A.P., 2013: Summer precipitation variability over the Southeastern United States. *Climate Dynamics*, DOI:10.1007/s00382-013-1697-9.

Brun*, J., and Barros, A.P., 2013: Exploring the Use of MODIS Vegetation Products to Monitor Hydroecological Impacts of Extreme Events in the Southeast United States. *Int. J. Remote Sensing*, 34:2, 519-544. http://dx.doi.org/:10.1080/01431161.2012.714088.

Shrestha*,P. and Barros$, A. P., and Khlystov, A.,2012: CCN estimates from bulk hygroscopic growth factors of ambient aerosols during the pre-monsoon season over Central Nepal. *Atmospheric Environment*, doi: 10.1016/j.atmosenv.2012.10.042.

Sun*, X., and Barros, A.P., 2012: The impact of forcing dataset on the high resolution simulation of Tropical Storm Ivan (2004) in the Southern Appalachians. *Monthly Weather Review*, doi: 10.1175/MWR-D-11-00345.1

Wohl, E., Barros, A.P., Brunsell, N. , Chappell, N., Coe, M., Giambelluca, T., Goldsmith, S., Harmon, R., Hendrickx, J., Juvik, J., McDonnell, J., and Ogden, F., 2012: A research vision for hydrology of the humid tropics: Balancing water, energy, and land use. *Nature Climate Change,* doi:10.1038/NCLIMATE1556.

Prat*, O., Barros$, A.P., Testik*, F., 2012: On the Influence of Raindrop Collision Outcomes on Equilibrium Size distributions. *J. Atmos. Sci*., 69, 1534-1546.

Tapiador, F., A. Hou, M. de Castro, R. Checa, Cuartero, F, and Barros, A.P., 2011: Precipitation estimates for hydroelectricity. *Energy and Envir. Science*, doi:10.1039/C1EE01745D.

Kang*, D.H., and Barros, A. P., 2012: Observing System Simulation of Snow Microwave Emissions over Data Sparse Regions. Part 2: Multilayer Physics, *IEEE TGRSS,* doi:10.1109/TGRS.2011.2169074.

Kang*, D.H., and Barros, A. P., 2012: Observing System Simulation of Snow Microwave Emissions over Data Sparse Regions. Part 1: Single Layer Physics, *IEEE TGRSS,* doi:10.1109/TGRS.2011.2169073.

Brun*, J., Shrestha*, P. , Barros$, A.P., 2011: Aerosol runup along the Himalayan range. *Atmospheric Environment*, 45,6382-6392.

Testik*, F., Barros$, A.P., Bliven, L., 2011: Toward a Physical Characterization of Raindrop Collision Outcomes. *J. Atmos. Sci*., doi: 10.1175/2010JAS3706.1.

Shrestha* P., Barros[$], A.P., Khlystov A., 2010: Chemical composition and aerosol size distribution of the middle mountain range in the Nepal Himalayas during the 2009 pre-monsoon season, *Atmospheric Chemistry and Physics*, doi:10.5194/acp-10-11605-2010.

Kang,* D.H., and Barros, A. P., 2010**:** Introducing an L-band Snow Sensor System for In Situ Monitoring of Changes in Water Content - Full-System Testing. *IEEE TGARSS*, *Vol. 49, Issue:4; doi:* 10.1109/TGRS.2010.2072786 **.**

Shrestha*, P., and Barros, A.P., 2010: Joint Spatial Variability of Aerosol, Clouds and Rainfall in the Himalayas from Satellite Data, *Atmos. Chemistry and Physics,* 10,1-13.doi:10.5194/acp-10-1-2010.

Prat *, O., and Barros, A.P., 2010b: Assessing satellite-based precipitation estimates in the Southern Appalachian Mountains using raingauges and TRMM PR. *Adv. Geosci*., 25, 143–153.

Barros, A.P., Prat*, O., Testik*, F., 2010: "Size distribution of raindrops", *Nature Physics*, 6, 232.

Barros, A.P., 2010: Reply to comment by Qingyun Han on "Metrics to describe the dynamical evolution of atmospheric moisture: Intercomparison of model (NARR) and observations (ISCCP)" by Tao and Barros (2008). *J. Geophys. Res.*, 115, D14125, doi:10.1029/2009JD013562.

Prat*, O., and Barros, A. P., 2010: Ground Observations to Characterize the Spatial Gradients and Vertical Structure of Orographic Precipitation – Experiments in the Inner Region of the Great Smoky Mountains *, J. Hydrology*, doi:10.1016/j.jhydrol.2010.07.013**.**

Sun*, X., and Barros, A.P., 2010a: "An Evaluation of the Statistics of Rainfall Extremes in Rainguage Observations, and Satellite-based and Reanalysis Products Using Multifractals", *J. Hydromet*., doi:10.1175/2009JHM1142.1

Yildiz*, O. and Barros, A.P., 2009. Evaluating spatial variability and scale effects on hydrologic processes in a midsize river basin. *Scientific Research and Essays*, 4(4): 217-225.

Tao*, K, and Barros, A.P., 2009: Fractal Downscaling of Satellite Precipitation Products for Hydrometeorological Applications. *J. Atmos. Oceanic Technol*., Vol. 27, doi: 10.1175/2009JTECHA1219.1

Prat*, O., and Barros, A.P., 2009: Exploring the transient behavior of Z-R relationships-Implications for Radar Rainfall Estimation. *J.Appl.Meteor.Clim.,* 48 (10),2127-2143.

Giovannettone*, J.P., and Barros, A.P., 2009: Probing Regional Landform Controls of Cloudiness and Precipitation in the Central Andes Using Satellite Data. *J. Hydrometeorology*, Vol. 10, 167-182.

Barros, A.P., and Tao*, K., 2008: A Space-Filling Algorithm to Extrapolate Narrow Swath Instantaneous TRMM Microwave Rain Rate Estimates Using Thermal IR Imagery. *J. Atmos. Oceanic Technol*., Vol. 25, No.11, 1901-1920.

Barros, A.P., Prat*, O., Shrestha*, P., Testik*, F., and Bliven, L., 2008: Revisiting Low and List (1982): Evaluation of Raindrop Collision Parameterizations Using Laboratory Observations and Modeling. *J. Atmos. Sci*. , Vol. 65, No. 9, 2983–2993.

Prat*, O., Barros$, A.P., and Williams, C., 2008: An intercomparison of model simulations and VPR estimates of the vertical structure of warm stratiform rainfall during TWP-ICE . *J. Applied Meteor. and Clim*., Vol. 47, No. 11, 2797–2815.

Tao*, K., and Barros, A.P., 2008: Metrics to describe the dynamical evolution of atmospheric moisture: Intercomparison of model (NARR) and observations (ISCCP), *J. Geophys. Res*.,113, D14125, doi:10.1029/2007JD009337.

Giovannettone*, J.P., and Barros, A.P., 2008: A Remote Sensing Survey of the Role of Landform on the Organization of Orographic Precipitation in Central and Southern Mexico. *J. Hydrometeorology*, doi:10.1175/2008JHM947.1.

Barros, A.P., and Bowden, G.*, 2008: Toward Long-Lead Forecasts of Drought: A Case-Study in the Murray-Darling River Basin. *J. Hydrology*, doi:10.1016/j.jhydrol.2008.05.026.

Bhushan*, S., and Barros, A.P., 2007: A Numerical Study to Investigate the Relationship Between Moisture Convergence Patterns and the Spatial Distribution of Orographic Precipitation Features from TRMM in Central Mexico. *J. of Hydromet.*, **8**,1264-1284.

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