Curriculum Vitae

Dr. Dongryeol Ryu

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CURRENT POSITION

Senior Lecturer, Department of Infrastructure Engineering, The University of Melbourne.

My current role includes:

- Leader of Hydrology and Remote Sensing Group, The University of Melbourne
- Leader of UAV Research Unit, Centre for Disaster Management and Public Safety, The University of Melbourne
- Master of Engineering – Environmental program deputy coordinator
- Postgraduate Coordinator (RHD admission), Department of Infrastructure Engineering
- Dept. of Infrastructure Engineering Laboratory Committee member
- Latin America Regional Strategy Group - Representative of Environmental Engineering
- Research project leadership
- Postgraduate and undergraduate teaching, subject coordination and curriculum development.
- Research fellows and RHD students supervision

ACADEMIC QUALIFICATIONS

2003 - 2006	Ph.D. in Earth System Science, University of California, Irvine, USA *Dissertation: Footprint-Scale Soil Moisture Spatial-Temporal Variability and Implication for Satellite Validation*
2001 - 2003	M.S. in Earth System Science, University of California, Irvine, USA
1998 - 2000	M.S. in Geology (Hydrogeology), Seoul National University, Korea *Dissertation: Estimation of Hydraulic Properties around a Gas Storage Cavern from Hydraulic Responses to Gas Pressure Fluctuation*
1991 - 1997	B.S. in Geological Science, Seoul National University, Korea

EMPLOYMENT HISTORY

Sep. 2011 -	Senior Lecturer, Department of Infrastructure Engineering, Melbourne School of Engineering, The University of Melbourne, Victoria, Australia
May. 2008 - Aug. 2011	Lecturer, Department of Infrastructure Engineering, Melbourne School of Engineering, The University of Melbourne, Victoria, Australia
Mar. 2006 - April 2008	Research Physical Scientist, US Department of Agriculture, Agricultural Research Service, Hydrology and Remote Sensing Laboratory, Maryland USA
Sep. 2004 - Mar. 2006	NASA Earth System Science Graduate Fellow
Sep. 2001 - Aug. 2004	Research Assistant (includes Teaching Assistant for 3 quarters), Earth System Science, University of California, Irvine, USA

TEACHING AND RELATED EXPERIENCE

Postgraduate and Undergraduate Coursework Programs

Curriculum development

- Development of GEOM90005 Remote Sensing
- Development of ENEN90032 Environmental Analysis Tools
- Development of ENEN90030 Contaminant Hydrologeology
- Development of projects for ENEN90025/CVEN40017 Analysis and Design - Environmental Systems

Subject coordination

- GEOM90005 Remote Sensing, 2014-ongoing
- ENEN0030 Contaminant Hydrogeology (Groundwater Hydrology from 2014), 2011-ongoing
- ENEN90032 Environmental Analysis Tools, 2010-ongoing

Lecturing and other delivery

- ENEN90032 Environmental Analysis Tools (100%), 2010-ongoing
- ENEN90030 Groundwater Hydrology (50%), 2011-ongoing
- GEOM90005 Remote Sensing (100%), 2014-ongoing

Other Teaching Experience

- Coorinator/instructor of ENEN90025/CVEN40017 Analysis and Design - Environmental Systems, 2008-2010
- Lecture on Environmental Remote Sensing for delegates from India as a part of Aus-Aid training program, 2012

- Lectures on Time Series Analysis and Baseflow Analysis for the Australian Bureau of Meteorology, 2012, 2013
- Lecture on Microwave Remote Sensing for delegates from China as a part of Aus-Aid training program, 2009
- Lecture on Remote Sensing and Its Hydrological Applications for Shanxi Aus-Aid training program, 2010
- Oceanography (ESS3), Earth System Science, University of California, Irvine, 2004
- The Atmosphere (ESS5), Earth System Science, University of California, Irvine, 2003
- Geology (ESS7), Earth System Science, University of California, Irvine, 2002

Research Higher Degree

Currently supervising 10 PhD students (Primary Supervisor for 8 and Co-supervisor for 2), 1 Masters by Research (MPhil) student and 5 Master of Engineering (ME) research project students. Previously supervised 16 undergraduate and ME research project students.

PhD Students

- †**Ye Nan** (2008–2014, earned PhD in August 2014), Mixed Pixel Retrieval of Soil Moisture from L-band Passive Microwave Observations.
- **Yuan Li** (2010–2014, earned PhD in October 2014), Assimilation of Stream Discharge into Continuous Flood Forecasting Models.
- **Venkata Radha Akuraju** (2011–), Estimation of Root-Zone Soil Moisture Using Evapotranspiration.
- **Camila Alvarez** (2011–), Assimilation of Satellite Soil Moisture into Real-Time Flood Forecasting Models.
- **Aiswarya Kunnath Poovakka** (2012–), Large-Scale Water Resources Assessment Using Integrated Model-Observation System.
- **Minoo Hashemian** (2012–), Estimating Root-Zone Soil Moisture by Assimilating Remotely Sensed Biophysical and Thermal Variables into Modelling.
- **Abbas Mohammadi** (2012–), Combining DEM and New-Generation Satellite Observations to Understand Large Complex River Systems.
- **Kate Park** (2014–), UAV-borne Sensing of Vegetation Water Stress and Soil Wetness.
- **Chih-Chung Chou** (2015–), Investigating the Impact of Irrigation Development on the Indian Monsoon Using a Coupled Land-Atmosphere System.
- **Naveen Joseph** (2015–), Investigation of Optimal Agricultural Water Resources Management of India in Changing Climate.
- *__Amir Orangi__ (2014–), Evaluation of Soil Properties through Electromagnetic Fields.
- *__Danuta Kucharska__ (2010–, part time), Characterisation of Stream Network and Flood Inundation in the Cooper Creek Catchment Using Satellite Remote Sensing.

- †**Sandy Peischl** (2008–), Multi-Angle Soil Moisture Retrieval from SMOS.
- †**Ying Gao** (2011–), Improving Spatial Resolution of Satellite Soil Moisture Using Coupled Active and Passive Microwave Algorithms.

* *Co-supervising students*
† *Externally supervising students.*

Masters by Research (MPhil) Students

- **Andrew Nolan** (2014–), Remote Sensing Crop Vigour using Unmanned Aerial System (UAS).

Undergraduate and Masters Research Project Students

- **Haoji Sima**, 2008, Impact of Recent Droughts (2005-2006) on Water Resources in the Murray-Darling Basin (CEE Final Year).
- **Kaighin A. McColl**, 2009, Soil Salinity Impacts on L-Band Microwave Remote Sensing of Soil Moisture and Implications for Microwave Satellite Missions (CEE Final Year).
- **Jock Martin**, 2009, Evaluation of Satellite Precipitation Product over Inner Basins in Australia (CEE Final Year).
- **Daniel White**, 2009, Remote Sensing of Evapotranspiration in the Musi Catchment, India (CEE Final Year).
- **Edwin Cassano**, 2010, Simulation of Multiphase Contaminant Transport from a Point Source (ME Environmental).
- **Jonathan Ho**, 2010, Comparative Analysis of NDVI and Microwave-Derived Soil Moisture for Determining Surface Water in the Cooper Creek Catchment (CEE Final Year).
- **Rong Zhuang**, 2011, Mapping Flood Events Using Remote Sensing in an Arid Zone River, Central Australia (ME Environmental).
- **Chenxi Zang**, 2012, Optimal Solution to Calibrate Land Surface Models (ME Environmental).
- **Ana Kovacevic**, 2012, Characterisation of AWRA-L model error covariance structure and implications for generating ensemble predictions (ME Environmental).
- **Kai Kang**, 2012, Utilizing Plant Biophysical Responses to Water Stress to Estimate Soil Water Content (ME Environmental).
- **Peng Xu**, 2012, Optimal Calibration Strategies for Land Surface Modelling Using Surface Moisture Content and Evapotranspiration (ME Environmental).
- **Jinjin Liu, PHil Howarth, and Thomas Emmett**, 2013, Remote Sensing of Vegetation from Unmanned Aerial Vehicle (UAV) Platforms (ME Civil, ME Environmental).
- **Zhengtao An**, 2013, Evaluation of Real-Time Satellite Precipitation Product in Australia (ME Environmental).

- **Ninik Damiyati**, 2014, Mapping the Expansion of Mines in Forest Area of Kalimantan, Indonesia (Master of Environment, Office for Env. Programs).
- **He Ma, Kentaro Takido**, 2014–2015, Hyperspectral Sensing of Vegetation Biomass (ME Environmental).
- **Jie Jian**, 2015, Streamflow Prediction in Ungauged Basins using Water Level Measurements (ME Environmental).
- **Shuci Liu**, 2015, Estimating Land Surface Soil Moisture from Space (ME Environmental).

RESEARCH

Grants as Chief Investigator or Equivalent

- 2015, Melbourne School of Engineering Major Teaching Infrastructure Fund, **Ryu**, ($14K)
- 2015, Melbourne School of Engineering Strategic Equipment Fund (Light-weight LiDAR for Unmanned Aerial Vehicle), **Ryu**. ($208K)
- 2015, Melbourne Networked Society Institute (MNSI) Seed Funding, A Framework for Remote Sensing and Data Analysis Using Fixed and Mobile Sensors in a Combined Sensor Network, Kazmierczak, **Ryu**, Fuentes. ($60K)
- 2014, DEPI-UoM Innovation Seed Fund for Horticultural Development, UAV-borne Infrared Thermography for Plant Water Stress, **Ryu**, Fuentes, O'Connell. ($25K)
- 2014, ARC Linkage Project Grant (LP140100495), Predicting water quality at the catchment scale: learning from two decades of monitoring, Western, **Ryu**, Webb, Leahy, Schreiber, Watson, Waters, Goudey. ($315K (ARC) + $165K (Industry))
- 2013-2014, ESA Climate Change Initiative (Research Contract with Vienna University of Technology), De-noising of ECV Soil Moisture Satellite Data Using Physical Model-based Digital Filters, Su and **Ryu**. ($30K)
- 2013, Carlton Connect Initiative Fund - Research Collaboration Scheme, Integrated Model-Observation System for Water Resources Assessment in Remote Regions, **Ryu**, Western, Stewardson, Costelloe, Alcorn, McNeil. ($146K)
- 2013, Carlton Connect Initiative Fund - Research Facilitation Scheme, Forecasting and control systems for the upper Murray River. Weyer, **Ryu**, Western, Stewardson, Webb, Langford, Dreverman, Ooi, Saleem. ($20K)
- 2013, ARC LIEF Grant (LE130100040), Integrated Greenhouse Gas Measurement System (IGMS) for monitoring agricultural emissions at field to regional scales, Chen, Western, Grace, Griffith, Chung, Hacker, **Ryu**, Phillips, Eckard, Beringer, Dassanyake, Denmead. ($450K)
- 2012-2016, US National Science Foundation, Partnerships in International Research and Education (PIRE): Low energy options for making water from waste water, Grant, AghaKouchak, Ambrose, Bowler, Cooper, Detwiler, Elghobashi, Feldman, Jiang, Kohne, Lejano, Levin, Riley, McBride, Prather, Saphores, Rosso, Sanders, Sengupta, Stein, Sutula, Tang, Treseder, Vrugt, Brown, Cook, Deletic, Fletcher, Hamilton, Marusic, McCarthy, **Ryu**, Stewardson, Western. ($4M)

- 2011-2014, ARC Linkage Project Grant (LP110200520), A New-Generation Flood Forecasting System Using Observations from Space, Western, **Ryu**, Walker, Elliot, Leahy, Crow, Wang, Pagano, Renzullo. ($174K (ARC) + $120K (Industry))
- 2010-2013, ACIAR Project Grant, Impacts of climate change and watershed development on whole-of-basin agricultural water security in the Krishna and Murray-Darling basins, Malano, Davidson, **Ryu**, Pavelic, Kumar, Anshuman. ($1.3M)
- 2010-2014, CSIRO Research Grant, Impact of bushfires and land use changes on seasonal stream flows for real-time forecasting, **Ryu**, Western. ($110K)
- 2010-2011, Korea Polar Research Institute Research Grant, Global mapping of sea surface salinity using multiple L-band satellite instruments, **Ryu**. ($90K)
- 2009-2011, ARC Discovery Project Grant (DP0984586), Active-passive microwave soil moisture remote sensing: Towards sustainable land and water management from space, Walker, **Ryu**, Gray, Jackson. ($540K)
- 2009, The University of Melbourne, Joint Research Project Grant, Improved flood prediction using remotely sensed soil moisture from space, **Ryu**, Crow. ($10K)

Industry Linkage

- URS Australia Pty. Ltd. (2015 - ongoing)
- Department of Economic Development, Jobs, Transport & Resources (2015 - ongoing)
- Bureau of Meteorology, Hydrology Branch (2008 - ongoing)
- US Department of Agriculture, Hydrology and Remote Sensing Laboratory (2008 - ongoing)
- Department of Primary Industry, Victoria (2009 - 2013)
- CSIRO Land and Water (2009 - ongoing)
- Korea Polar Research Institute, Korea (2010 - 2013)
- International Water Management Institute (IWMI), India (2010 - 2015)
- The Energy and Resources Institute (TERI), India (2010 - 2015)
- Indian Institute of Tropical Meteorology (IITM), India (2010 - 2015)

External Research Collaborations

- Prof. James Famiglietti, University of California, Irvine, USA
- Prof. Aaron Berg, Guelph University, Canada
- Dr. Wade Crow, USDA, ARS, Hydrology and Remote Sensing Lab., USA
- Dr. Thomas Jackson, USDA, ARS, Hydrology and Remote Sensing Lab., USA
- Dr. QJ Wang, CSIRO Land & Water
- Dr. Thomas Pagano, CSIRO Land & Water

- Dr. Luigi Renzulo, CSIRO Land & Water
- Prof. Jeffery Walker, Monash University
- Prof. Kiweon Seo, Seoul National University, Korea
- Prof. Youngryel Ryu, Seoul National University, Korea
- Prof. Sinkyu Kang, Kangwon National University
- Dr. Fuqin Li, Geoscience Australia
- Dr. Hoam Chung, Monash University
- Dr. Michael Cosh, USDA, ARS, Hydrology and Remote Sensing Lab., USA
- Dr. Rajat Bindlish, USDA, ARS, Hydrology and Remote Sensing Lab., USA
- Dr. John Bolten, NASA Goddard Space and Flight Center, USA
- Peggy O'Neil, NASA Goddard Space and Flight Center, USA

SERVICE TO THE DISCIPLINE

Workshop and Conference Organisation

- Convener/Chair of *Recent Advances in Hydrological Remote Sensing and Applications in Model Calibration and Prediction*, 20^{th} International Congress on Modelling and Simulation 2013, Adelaide, Australia, 1-6 December 2013.
- Convener/Chair of *Remote Sensing Applications in Hydrology*, American Geophysical Union (AGU) Fall Meeting, San Francisco, USA, 3-7 December 2012.
- Convener/Chair of *Hydrologic Applications of Remote Sensing*, 19^{th} International Congress on Modelling and Simulation 2011, Perth, Australia, 12-16 December 2011.
- Convener/Chair of *Remote Sensing Applications in Hydrology*, American Geophysical Union (AGU) Fall Meeting, San Francisco, USA, 5-9 December 2011.
- Convener/Chair of *Remote Sensing of Hydrology and Its Applications*, American Geophysical Union (AGU) Fall Meeting, San Francisco, USA, 13-17 December 2010.
- Convener/Chair of *Remote Sensing and Hydrogeophysics Applications for Modeling of Land Surface Hydrological Processes*, American Geophysical Union (AGU) Fall Meeting, San Francisco, USA, 14-18 December 2009.
- Organizer and Planning Committee of iLEAPS-GEWEX Early Career Scientist Workshop, Melbourne, Australia, 20-22 August 2009.
- Convener/Chair of *Integration of Remotely Sensed and In-Situ Observations into Hydrologic Modelling*, World IMACS and MODSIM Congress, Cairns, Australia, 13-17 July 2009.
- Chair of *Passive Microwave Sensing of Soil Moisture*, International Geoscience and Remote Sensing Symposium (IGARSS), Boston, USA, 6-11 July 2008.

- Convener/Chair of *Advancing Data Assimilation and Uncertainty Assessment for Improved Hydrologic Predictions*, American Geophysical Union (AGU) Fall Meeting, San Francisco, USA, 10-14 December 2007.
- Chair of *Soil Moisture Passive Techniques*, International Geoscience and Remote Sensing Symposium (IGARSS), Seoul, Korea, 25-29 July 2005.

Proposal Reviewer

- Australian Research Council
- Canadian Space Agency - Capacity Building in SS&T - Clusters Pilots
- Research Grants Council of Hong Kong

Journal Reviewer

- Remote Sensing of Environment
- International Journal of Remote Sensing
- IEEE Transactions on Geoscience and Remote Sensing
- IEEE Geoscience and Remote Sensing Letters
- IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
- Water Resources Research
- Geophysical Research Letters
- Journal of Geophysical Research
- Advances in Water Resources
- Journal of Hydrometeorology
- Journal of Hydrology
- Hydrology and Earth System Science
- Vadose Zone Journal
- Journal of Arid Environments
- Geoscientific Model Development

HONOURS AND AWARDS

- Early Career Research Excellence Award, Modelling and Simulation Society of Australia and New Zealand (2013)
- UCI Medal Fellowship, University of California, USA (2005)
- NASA Earth System Science Fellowship, USA (2004-2006)
- Korean Government Overseas Fellowship, Korea (2001-2003)
- Brain Korea 21 Research Fellowship, Korea (1999-2001)

PUBLICATIONS

* *Written by lead authors (students or post-doc researchers) supervised by me.*

Book Chapters

1. *Pipunic, R., **D. Ryu**, J. P. Walker (2014), Assessing near-surface soil moisture assimilation impacts on modelled root-zone moisture for an Australian agricultural landscape. Remote Sensing of the Terrestrial Water Cycle, *AGU Monograph 206*, edited by V. Lakshmi, D. Alsdorf, M. Anderson, S. Biancamaria, M. Cosh, J. Entin, G. Huffman, W. Kustas, P. van Oevelen, T. Painter, J. Parajka, M. Rodell, C. Rüdiger, American Geophysical Union & John Wiley & Sons.

2. Walker, J., **D. Ryu**, M. Zreda, G. Dumedah, A. Monerris, Y. Gao, C. Rudiger, X. Wu, R. Panciera, O., Merlin, and R. Pipunic (2012), High resolution soil moisture mapping. Digital Soil Assessments and Beyond: Proceedings of the 5th Global Workshop on Digital Soil Mapping 2012, edited by B. Minasny, B. Malone, and A. McBratney, Taylor & Francis Ltd. 45-51.

Journal Articles

3. Cho, E., C.-H. Su, **D. Ryu**, H. Kim, and M. Choi (2015), Does AMSR2 produce better soil moisture retrievals than AMSR-E over Australia?, *Remote Sens. Environ.*, under review.

4. Baik, J., J. Park, **D. Ryu**, and M. Choi (2015), Geostatistical merging of Communications, Ocean and Meteorological Satellite (COMS) precipitation product with ground-based measurements, *Hydrol. Process.*, under review.

5. Gao, Y., J. P. Walker, N. Ye, R. Panciera, A. Monerris, **D. Ryu**, and C. Rüdiger (2015), Evaluation of the tau-omega model for passive microwave soil moisture retrieval using SMAPEx data sets, *IEEE Trans. Geosci. Remote Sens.*, under review.

6. *Kunnath-Poovakka, **D. Ryu**, L. J. Renzullo, and B. George (2015), The efficacy of calibrating hydrologic model using remotely sensed evapotranspiration and soil moisture for streamflow prediction, *J. Hydrol.*, under review.

7. *Akuraju, V. R., **D. Ryu**, B. George, Y. Ryu, and K. Dassanayake (2015), Seasonal and inter-annual variability of soil moisture stress function in dryland wheat field, Australia, *Agr. Forest Meteorol.*, under review.

8. Yilmaz, M., W. T. Crow, and **D. Ryu** (2015), Impact of model relative accuracy in framework of rescaling observations in hydrological data assimilation studies, *Hydrol. Earth Syst. Sci.*, under review.

9. Rüdiger, C., C.-H. Su, **D. Ryu**, and W. Wagner (2015), Disaggregation of low-resolution L-band radiometery using C-band radar data, *Geophys. Res. Lett.*, under review.

10. *Nolan, A., S. Park, **D. Ryu**, H. Chung, R. Young, M. O'Connell, and S. Fuentes (2015), Development of an adaptive intervalometer remote sensing system for an unmanned aerial vehicle (UAV), *Comput. Electron. Agr.*, under review.

11. Crow, W. T., C. H. Su, **D. Ryu**, and M. Yilmaz (2015), Optimal averaging of soil moisture predictions from ensemble land surface model simulations, *Water Resour. Res.*, accepted on 5 November 2015.

12. *Hashemian, M., **D. Ryu**, W. T. Crow, and W. P. Kustas (2015), Improving root-zone soil moisture estimations using dynamic root growth and crop phenology, *Adv. Water Resour.*, accepted on 7 October.

13. *Pipunic, R. C., **D. Ryu**, J. Costelloe, and C. H. Su (2015), Evaluation of and error modelling for the TRMM 3B42RT version 7 satellite rainfall product over Australia, *J. Geophys. Res.*, accepted on 3 October, 2015.

14. *Zheng, G., **D. Ryu**, C. Jiao, and C. Hong (2015), Estimation of soil organic matter content in coastal saline soil using reflectance spectroscopy, *Pedosphere*, accepted on 9 June, 2015.

15. *Ye, N., J. P. Walker, J. Guerschman, **D. Ryu**, and R. J. Gurney (2015), Standing water effect on soil moisture retrieval from passive microwave observations at L-band, *Remote Sens. Environ.*, Volume 169, 232-242, doi:10.1016/j.rse.2015.08.013.

16. *Teluguntal, P., **D. Ryu**, B. George, J. P. Walker, and H. Malano (2015), Mapping flooded rice paddies using time series of MODIS imagery in the Krishna River Basin, India, *Remote Sens.*, Volume 7, 8858-8882, doi:10.8890/rs70708858.

17. *Li, Y., **D. Ryu**, A. W. Western, and Q. J. Wang (2015), Assimilation of stream discharge for flood forecasting: Updating a semi-distributed model with an integrated data assimilation scheme, *Water Resour. Res.*, 51, doi:10.1002/2014WR016667.

18. *Alvarez-Garreton, C., **D. Ryu**, A. W. Western, C. H. Su, W. T. Crow, and D. E. Robertson (2015), Improving operational flood prediction by the assimilation of satellite soil moisture: comparison between lumped and semi-distributed schemes, *Hydrol. Earth Syst. Sc.*, 19, 1659-1676, doi:10.5194/hess-19-1659-2015.

19. *Su. C. H., S. Y. W. M. Narsey, A. Gruber, A. Xaver, D. Chung, **D. Ryu**, W. Wagner (2015), Evaluation of post-retrieval de-noising of active and passive microwave satellite soil moisture, *Remote Sens. Environ.*, Volume 163, 127-139, doi:10.1016/j.rse.2015.03.010.

20. *Gao., Y., J. P. Walker, M. Allahmoradi, A. Monerris, **D. Ryu**, and T. Jackson (2015), Optical sensing of vegetation water content: a synthesis study, *IEEE J. Sel. Topics Appl. Earth Observ.*, Volume 8, Issue 4, 1456-1464, doi:10.1109/JSTARS.2015.2398034.

21. *Su, C. H., and **D. Ryu** (2015), Multi-scale analysis of bias correction of soil moisture, *Hydrol. Earth Syst. Sci.*, 19, 17-31, doi:10.5194/hess-19-17-2015.

22. *Li, Y., **D. Ryu**, A. W. Western, Q. J. Wang, D. E. Robertson, W. T. Crow (2014), An integrated error parameter estimation and lag-aware data assimilation scheme for real-time flood forecasting, *J. Hydrol.*, Volume 519, 2722-2736, doi:10.1016/j.jhydrol.2014.08.009.

23. *Alvarez-Garreton, C., **D. Ryu**, A. W. Western, W. T. Crow, D. E. Robertson (2014), The impacts of assimilating satellite soil moisture into a rainfall-runoff modle in a semi-arid catchment, *J. Hydrol.*, Volume 519, 2763-2774, doi:10.1016/j.jhydrol.2014.07.041.

24. *Su, C. H., **D. Ryu**, W. T. Crow, A. W. Western (2014), Stand-alone error characterisation of microwave satellite soil moisture using a Fourier method, *Remote Sens. Environ.*, Volume 154, 115-126, doi:10.1016/j.rse.2014.08.014.

25. *Su, C. H., **D. Ryu**, W. T. Crow, A. W. Western (2014), Beyond triple collocation: Applications to soil moisture monitoring, *J. Geophys. Res.*, Volume 119, Issue 11, 6419-6439, doi:10.1002/2013JD021043.

26. Chen, F., W. T. Crow, **D. Ryu** (2014), Dual forcing and state correction via soil moisture assimilation for improved rainfall-runoff modeling, *J. Hydrometerol.*, Volume 15, Issue 5, 1832-1848, doi:10.1175/JHM-D-14-0002.1.

27. Wagner, W., V. Naeimi, R. Reichle, C. Draper, R. de Jeu, **D. Ryu**, C. H. Su, A. Western, J.-C. Calvet, Y. H. Kerr, D. J. Leroux, M. Drusch, and T. J. Jackson (2014), Clarifications on the "Comparison Between SMOS, VUA, ASCAT, and ECMWF Soil Moisture Products Over Four Watersheds in U.S.", *IEEE Trans. Geosci. Remote Sens.*, Volume 52, Issue 3: pp 1901-1906, doi:10.1109/TGRS.2013.2282172.

28. *Peischl, S., J. P. Walker, N. Ye, **D. Ryu**, Y. Kerr (2014), Sensitivity of multi-parameter soil moisture retrievals to incidence angle configuration, *Remote Sens. Environ.*, 143, 64-72, doi:10.1016/j.rse.2013.11.019.

29. Panciera, R., J. Walker, T. Jackson, **D. Ryu**, D. Gray, A. Monerris-Belda, H. Yardley, M. Tanase, C. Rudiger, X. Wu, and Y. Gao (2014), The Soil Moisture Active and Passive Experiments (SMAPEx): Towards Soil Moisture Retrieval from the SMAP Mission, *IEEE Trans. Geosci. Remote Sens.*, Volume 52, Issue 1: pp 490-507, doi:10.1109/TGRS.2013.2241774.

30. *Su, C. H., **D. Ryu**, A. W. Western, and W. Wagner (2013), De-noising of passive and active microwave satellite soil moisture time series, *Geophys. Res. Lett.*, 40, doi:10.1002/grl.50695.

31. *Su, C. H., **D. Ryu**, R. I. Young, A. W. Western, and W. Wagner (2013), Inter-comparison of microwave satellite soil moisture retrievals over the Murrumbidgee Basin, southeast Australia, *Remote Sens. Environ.*, 134, 1-11, doi:10.1016/j.rse.2013.02.016.

32. *Li, Y., **D. Ryu**, A. W. Western, and Q. J. Wang (2013) Assimilation of stream discharge for flood forecasting: the benefits of accounting for routing time lags, *Water Resour. Res.*, 49, 1887-1900, doi:10.1002/wrcr.20169.

33. *Teluguntla, P., **D. Ryu**, B. George, and J. P. Walker (2013), Multi-decadal trend of basin-scale evapotranspiration estimated using AVHRR data in the Krishna River Basin, India, *Vadose Zone J.*, doi:10.2136/vzj2012.0118.

34. Crow, W. T., A. A. Berg, M. H. Cosh, A. Loew, B. P. Mohanty, R. Panciera, P. de Rosnay, **D. Ryu**, and J. P. Walker (2012), Upscaling sparse ground-based soil moisture observations for the validation of satellite surface soil moisture products, *Rev. Geophys.*, *50*, RG2002, doi:10.1029/2011RG000372.

35. *Peischl, S., J. P. Walker, **D. Ryu**, and Y. Kerr (2012), Wheat Canopy Structure and Surface Roughness Effects on Multiangle Observations at L-Band, *IEEE Trans. Geosci. Remote Sens.*, *50(5)*, pp 1498-1506, doi:10.1109/TGRS.2011.2174644.

36. *McColl, K. A., **D. Ryu**, V. Matic, J. P. Walker, J. Costelloe, and C. Rüdiger (2012), Soil salinity impacts on L-band remote sensing of soil moisture, *IEEE Geosci. Remote S.*, *9(2)*, pp 262-266, doi:10.1109/LGRS.2011.2165932.

37. **Ryu, D.**, T. J. Jackson, R. Bindlish, D. M. Le Vine, and M. Haken (2010), Soil moisture retrieval using a two-dimensional L-band synthetic aperture radiometer in a semi-arid environment, *IEEE Trans. Geosci. Remote Sens.*, *48(11)*, pp 1-12, doi:10.1109/TGRS.2010.2051677.

38. Seo, K., **D. Ryu**, B. M. Kim, D. E. Waliser, B. Tian, and J. Eom (2010), Estimates for accumulation of solid precipitation in the Arctic drainage region using GRACE and AMSR-E, *J. Geophys. Res.*, *115*, D20117, pp 1-18, doi:10.1029/2009JD013504.

39. **Ryu, D.**, W. T. Crow, X. Zhan, and T. J. Jackson (2009), Correcting unintended perturbation biases in hydrologic data assimilation, *J. Hydrometeorol.*, *10*, pp 734-750, doi:10.1175/2008JHM1038.1.

40. Crow, W. T., and **D. Ryu** (2009), A new data assimilation approach for improving hydrologic prediction using remotely sensed soil moisture retrievals, *Hydrol. Earth Syst. Sc.* ,*33*, 1-16.

41. Famiglietti, J. S., **D. Ryu**, A. A. Berg, M. Rodell, and T. J. Jackson (2008), Reply to comment by H. Vereecken et al. on "Field observations of soil moisture variability across scales", *Water Resour. Res.*, *44*, W12602, doi:10.1029/2008WR007323.

42. Famiglietti, J. S., **D. Ryu**, A. A. Berg, M. Rodell, and T. J. Jakcson (2008), Field observations of soil moisture variability across scales, *Water Resour. Res., 44*, W01423, doi:10.1029/2006WR005804.

43. **Ryu, D.**, T. J. Jackson, R. Bindlish, and D. M. Le Vine (2007), L-band microwave observations over land surface using a Two-Dimensional Synthetic Aperture Radiometer, *Geophys. Res. Lett., 34*, L14401, doi:10.1029/2007GL030098.

44. **Ryu, D.**, J. S. Famiglietti (2006), Multi-scale spatial correlation and scaling behavior of surface soil moisture, *Geophys. Res. Lett., 33*, L08404, doi:10.1029/2006GL025831.

45. **Ryu, D.**, and J. S. Famiglietti (2005), Characterization of footprint-scale surface soil moisture variability using Gaussian and beta distribution functions during the Southern Great Plains 1997 (SGP97) hydrology experiment, *Water Resour. Res., 41*, W12433, doi:10.1029/2004WR003835.

46. Cosh, M. H., T. J. Jackson, R. Bindlish, J. S. Famiglietti., and **D. Ryu** (2005), Calibration of an impedance probe for estimation of surface soil water content over large regions, *J. Hydrol., 311(1-4)*, pp 49-58.

47. Crow, W.T., **D. Ryu**, and J.S. Famiglietti (2005), Upscaling of field-scale soil moisture measurements using distributed land surface modeling, *Adv. Water Resour., 28(1)*, pp 1-5.

Peer-reviewed Conference Papers

48. *Alvarez, C., **D. Ryu**, A. Western, W. Crow, and D. Robertson (2013), Impact of observation error structure on satellite soil moisture assimilation into a rainfall-runoff model. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 30713077. ISBN: 978-0-9872143-3-1.

49. *Akuraju, V. R., **D. Ryu**, B. George, Y. Ryu, K. B. Dassanayake (2013), Analysis of root-zone soil moisture control on evapotranspiration in two agricultural fields in Australia. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 30643070. ISBN: 978-0-9872143-3-1.

50. *Poovaka, A. K., **D. Ryu**, L. Renzullo, R. Pipunic, and B. George (2013), Calibration of land surface model using remotely sensed evapotranspiration and soil moisture predictions. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International

Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 31203126. ISBN: 978-0-9872143-3-1.

51. *Su, C.-H., **D. Ryu**, A. Western, W. Crow, and W. Wagner (2013), Error characterization of microwave satellite soil moisture data sets using Fourier analysis. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 30643070. ISBN: 978-0-9872143-3-1.

52. *Gao, Y., J. P. Walker, R. Panciera, A. Monerris, and **D. Ryu** (2013), Retrieval of surface roughness from active and passive microwave observations. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 30923098. ISBN: 978-0-9872143-3-1.

53. *Pipunic, R., **D. Ryu**, J. Costelloe (2013), Evaluation of real-time satellite rainfall products in semi-arid/arid Australia. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 31073112. ISBN: 978-0-9872143-3-1.

54. *Mohammadi, A., **D. Ryu**, and J. F. Costelloe (2013), Mapping of flow paths in large, anastomosing arid zone rivers: Cooper Creek, Australia. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 24852491. ISBN: 978-0-9872143-3-1.

55. *Kucharska, D. J., M. J. Stewardson, **D. Ryu**, J. F. Costelloe, and N. Sims (2013), Ribbon plots A spatial flow analysis tool for stable multiple-channel drainage networks. In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 17071713. ISBN: 978-0-9872143-3-1.

56. Nune, R. B. George, H. Malano, B. Nawarathna, B. Davidson, and **D. Ryu** (2013), An assessment of climate change impacts on streamflows in the Musi catchment, India. . In Piantadosi, J., Anderssen, R.S. and Boland J. (eds) MODSIM2013, 20th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2013, pp. 23802386. ISBN: 978-0-9872143-3-1.

57. Walker, J. P., G. Dumedah, A. Monerris, Y. Gao, C. Rüdiger, X. Wu, R. Panciera, O. Merlin, R. Pipunic, **D. Ryu**, and M. Zreda (2012), High resolution soil moisture mapping, *5th Global Workshop on Digital Soil Mapping*, Sydeny, Australia.

58. **D. Ryu**, P. Teluguntla, H. M. Malano, B. A. George, B. N. Nawarathna, and A. Radha (2011), Analysis of spectral measurements in paddy rice field: implications for land use classification, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

59. *Pipunic, R. C., K. A. McColl, **D. Ryu**, and J. P. Walker (2011), Can assimilating remotely-sensed surface soil moisture data improve root-zone soil moisture predictions in the CABLE land surface model?, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

60. *Ho, J. M., **D. Ryu**, and J. Costelloe (2011), Comparative analysis of NDVI and microwave-derived soil moisture for determining surface water in the Cooper Creek catchment, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

61. *Teluguntla, P., **D. Ryu**, B. A. George, and J. P. Walker (2011), Impact of spatial scale on remotely sensed evapotranspiration estimates from heterogeneous land surfaces, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

62. *Zhuang, R., J. Costelloe, and **D. Ryu** (2011), Mapping flood events using remote sensing in an arid zone river, central Australia, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

63. *Peischl, S., N. Ye, J. P. Walker, **D. Ryu**, and Y. H. Kerr (2011), Soil moisture retrieval from multi-incidence angle observations at L-band, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

64. Monerris, A., J. P. Walker, R. Panciera, T. J. Jackson, D. Gray, H. Yardley, and **D. Ryu** (2011), The third Soil Moisture Active Passive Experiment (SMAPEx), *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

65. *Ye, N., J. P. Walker, C. Rüdiger, **D. Ryu**, and R. Gurney (2011), The effect of urban cover fraction on the retrieval of space-borne surface soil moisture at L-band, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

66. Davidson, A. B., H. M. Malano, B. A. George, B. N. Nawarathna, and **D. Ryu** (2011), Using real options analysis to evaluate the impacts of climate change on water security, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

67. *Gao, Y., J. P. Walker, **D. Ryu**, R. Panciera, and A. Monerris (2011), Validation of a $\tau - \omega$ model with Soil Moisture Active Passive Experiment (SMAPEx) data sets in Australia, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

68. *McColl, K. A., R. C. Pipunic, **D. Ryu**, and J. P. Walker (2011), Validation of the MODIS LAI product in the Murrumbidgee Catchment, Australia, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

69. George, B. A., A. B. Davidson, B. N. Nawarathna, **D. Ryu**, H. M. Malano, A. Kulkarni, A. Patwardhan, N. Deshpande, P. Pavelic, J. Anshuman, and K. Kumar (2011), A modeling framework to evaluate climate change and watershed development impacts on water security, *Proceedings of 19th International Congress on Modelling and Simulation (MODSIM)*, Perth, Australia.

70. George, B. A., R. Adams, **D. Ryu**, A. W. Western, H. Park, and B. N. Nawarathna (2011), An assessment of potential operational benefits of short-term stream flow forecasting in the Broken Catchment, Victoria, *Proceedings of IAHR 2011 34th World Congress*, Brisbane, Australia.

71. *Li, Y., **D. Ryu**, Q.J. Wang, T. Pagano, A. Western, P. Hapuarachchi, and P. Toscas (2011), Assimilation of streamflow discharge into a continuous flood forecasting model, *Proceedings of symposium IAHS* held during IUGG2011 in Melbourne, Australia.

72. Rüdiger, C., J. Walker, M. Allahmoradi, D. Barrett, J. Costelloe, R. Gurney, J. Hacker, Y. H. Kerr, E. Kim, J. LeMarshall, W. Lieff, A. Marks, S. Peischl, **D. Ryu**, and N. Ye (2009), Identification of spaceborne microwave radiometer calibration sites for satellite missions, *World IMACS and MODSIM Congress*, Cairns, Australia.

73. *Ye, N., J. Walker, R. Panciera, **D. Ryu**, C. Rüdiger, and R. Gurney (2009) The effect of rock cover fraction on the retrieval of surface soil moisture at L-band, *World IMACS and MODSIM Congress*, Cairns, Australia.

74. *Peischl, S., J. Walker, M. Allahmoradi, D. Barrett, R. Gurney, Y. Kerr, E. Kim, J. LeMarshall, C. Rüdiger, **D. Ryu**, and N. Ye (2009), Towards validation of SMOS using airborne and ground data over the Murrumbidgee catchment, *World IMACS and MODSIM Congress*, Cairns, Australia.

Conference Papers

75. Walker, J.P., P. O'Neil, X. Wu, Y. Gao, A. Monerris, R. Panciera, T. Jackson, D. Gray, and **D. Ryu** (2012), An Airborne Simulation of the SMAP Data Stream, *IEEE International Geoscience and Remote Sensing Symposium*, Munich, Germany.

76. *Teluguntla, P., **D. Ryu**, B. George, and J. Walker (2010), Long-term Product of Evapotranspiration Using AVHRR in the Krishna River Basin, India, *15th Australian Remote Sensing & Photogrammetry Conference*, Alice Springs, Australia.

77. *McColl, K. A., **D. Ryu**, and T Ngo (2010), Multi-Satellite Observations of Bushfire Risk, 15th Australian Remote Sensing & Photogrammetry Conference, Alice Springs, Australia.

78. **Ryu, D.**, T. J. Jackson, R. Bindlish, D. M. Le Vine, and M. Haken (2008), Soil Moisture Retreival Using an L-Band Synthetic Aperture Radiometer During the Soil Moisture Experiments 2003 (SMEX03) and 2004 (SMEX04), *IEEE International Geoscience and Remote Sensing Symposium*, Boston, USA.

79. **Ryu, D.**, T. J. Jackson, R. Bindlish, D. M. Le Vine, and M. Haken (2007), Two-Dimensional Synthetic Aperture Radiometry over Land Surface During Soil Moisture Experiment in 2003 (SMEX03), *IEEE International Geoscience and Remote Sensing Symposium*, Barcelona, Spain.

Datasets

80. Jackson, T. J., **D. Ryu**, and D. M. Le Vine (2009), SMEX03 Two-Dimensional Synthetic Aperture Radiometer (2D-STAR) Brightness Temperatures. Boulder, Colorado USA: National Snow and Ice Data Center. Digital media.

81. Jackson, T. J., **D. Ryu**, and D. M. Le Vine (2009), SMEX04 Two-Dimensional Synthetic Aperture Radiometer (2D-STAR) Brightness Temperatures. Boulder, Colorado USA: National Snow and Ice Data Center. Digital media.

Invited Presentations at Conferences and Seminars

- **Ryu, D.** (2015), Impact of Irrigation Development and Climatic Factors on Regional-Scale Evapotranspiration in the Krishna River Basin, India, Sungkyunkwan University, Korea, 12 June 2015 (***invited seminar presentation***).

- **Ryu, D.**, C. Alvarez-Garreton, C. -H. Su, W. T. Crow, and A. W. Western (2014), Conjunctive use of satellite precipitation and soil moisture for hydrologic predictions in ungauged basins, Smart Water Grid International Conference, 25-27 November 2014, Incheon, Korea, (***invited presentation***).
- **Ryu, D.** (2014) Optimal integration of ground and remotely sensed observations into hydrological models, Centre for Earth System Science, Tsinghua University, Beijing, China, 19 November 2014 (***invited seminar presentation***).
- **Ryu, D.** (2014), Leveraging ground and remotely sensed observations for hydrologic prediction, Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Science (CAS), Beijing, China, 18 November 2014 (***invited seminar presentation***).
- **Ryu, D.** (2014), Leveraging ground and remotely sensed observations for short-term streamflow forecasting, OzEWEX National Conference, Canberra, 28-29 October 2014 (***keynote presentation***).
- **Ryu, D.**, Flood Forecasting from Outback to Coast in Australia Using Observations from Ground to Space, *Taida Institute for Mathematical Science*, Taiwan National University, Taiwan, 14 November 2012 (***invited seminar presentation***).
- **Ryu, D.** and W. T. Crow, Improving Satellite Rainfall Accumulation Using Multiple Microwave Satellite Soil Moisture Products in Australia, *AOGS-AGU (WPGM) Joint Assembly*, Singapore, 13-17 August 2012 (***invited presentation***).
- **Ryu, D.**, A. W. Western, C. Leahy, S. Sooriyakumaran, W. T. Crow, J. Walker, Q. J. Wang, D. Robertson, and L. Renzullo, Flood Forecasting Using Spaceborne Observations, *Victorian Centre for Climate Change Adaptation Research (VCCCAR) Workshop on Climate Services for Adaptation in Victoria*, Melbourne, 13 July 2012 (***invited presentation***).
- **Ryu, D.**, Microwave Retrieval of Soil Moisture and Salinity Using L-band Radiometers in Arid and Semi-Arid Environments, *Kangwon National University*, Korea, 27 September 2010 (***invited seminar presentation***).
- Famiglietti, J. S., and **D. Ryu**, Field Observations of Soil Moisture Variability Across Scales and Its Representation in Hydrological Models, in Patterns in Soil-Vegetation-Atmosphere Systems Monitoring, Modelling and Data Assimilation, *International Workshop Transregio 32*, Aachen, Germany, 8-10 June, 2009 (***keynote presentation***).
- **Ryu, D.**, Impacts of Ensemble Perturbation Biases in Hydrologic Prediction and Data Assimilation, *CAWCR Workshop on Ensemble Prediction and Data Assimilation*, Melbourne, Australia, 16-18 February 2009 (***keynote presentation***).
- **Ryu, D.**, Improved Flood Prediction: Integrating Satellite Soil Moisture into the Operational Flood Forecasting System, *AustraliaChina Remote Sensing Technologies and Sustainability Symposium*, Canberra, Australia, 24-25 November 2008, (***invited presentation***).
- **Ryu, D.**, Hydrologic Data Assimilation for Flood Forecasting, *Water Information Research and Development Alliance(WIRADA) for Short Term Water Forecasting Workshop*, Melbourne, Australia, 21 August 2008 (***invited presentation***).

- **Ryu, D.**, Addressing Nonlinearity Issues and Spatial Integration Problems in Hydrologic Data Assimilation, NASA Jet Propulsion Laboratory, California, USA, 27 September 2007 (***invited seminar presentation***).
- **Ryu, D.**, and J. S. Famiglietti, Geostatistical Aspects of Scaling Behavior Observed in Regional Scale Surface Soil Moisture Fields, *The 2nd international CAHMDA workshop on: The Terrestrial Water Cycle: Modelling and Data Assimilation Across Catchment Scales*, Princeton University, New Jersey, USA, 25-27 October 2004 (***keynote presentation***).

Other Presentations at Conferences and Seminars

- **Ryu, D.**, C.-H. Su, A. W. Western and W. Wagner, Inter-comparison of Microwave Satellite Soil Moisture Retrievals over Australia, *Eos Trans. AGU, 93(52), Fall Meet. Supple., Abstract H13F-1412*, San Francisco, USA, 3-7 December 2012.
- **Ryu, D.** and W. T. Crow (2011), Correcting Errors in Catchment-Scale Satellite Rainfall Accumulation Using Microwave Satellite Soil Moisture Products, Eos Trans. AGU, 92(52), Fall Meet. Supple., Abstract H21F-1203.
- **Ryu, D.**, and K. A. McColl (2010), Satellite Observations of the Drought Factor and Their Applications to Bushfire Risk Assessment, Eos Trans. AGU, 91(52), Fall Meet. Supple., Abstract H23F-1290.
- **Ryu, D.**, J. Martin, W. Crow, J.F. Elliott, and A.B. Smith (2009), Improving Catchment-Scale Rainfall Accumulation Using Satellite Retrievals of Soil Moisture, Eos Trans. AGU, 90(52), Fall Meet. Supple., Abstract H54D-03.
- **Ryu, D.**, (2009), Impacts of Ensemble Perturbation Biases in Hydrologic Prediction and Data Assimilation, CAWCR Workshop on Ensemble Prediction and Data Assimilation, Melbourne, Victoria, Australia.
- **Ryu, D.**, (2008), Improved Flood Prediction: Integrating Satellite Soil Moisture into the Operational Flood Forecasting System, China-Australia Remote Sensing Technologies and Sustainability Symposium, Canberra, Australia.
- **Ryu, D.**, X. Zhan, and W. T. Crow (2007), Correcting Unintended Perturbation Biases in Hydrologic Data Assimilation Using the Ensemble Kalman Filter, Eos Trans. AGU, 88(52), Fall Meet. Supple., Abstract H31H-0756.
- **Ryu, D.**, W. T. Crow, and X. Zhan (2007), Assimilation of Coarse-Scale Satellite Soil Moisture Observations into a Fine-Scale Hydrologic Model, Satellite Observations of the Global Water Cycle, Irvine, CA.
- **Ryu, D.**, T. J. Jackson, R. Bindlish, D. M. Le Vine, and M. Haken (2006), L-Band Microwave Observations over Land Surface using Two-Dimensional Synthetic Aperture Radiometer, Eos Trans. AGU, 87(52), Fall Meet. Supple., Abstract H14C-04.
- **Ryu, D.**, J. S. Famiglietti, A. Berg, M. Rodell, M. M. Cosh, R. Bindlish, and T. J. Jackson (2006), Soil Moisture Variability at Aircraft- and Satellite-Footprint Scales, Eos Trans. AGU, 87(36), Jt. Assem. Suppl., Abstract H34B-04.
- **Ryu, D.**, T. H. Syed, S. C. Swenson, and J. S. Famiglietti (2005), Basin-Scale Hydrological Cycles from AMSR-E and GRACE, Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract G33B-0036.

- **Ryu, D.**, J. S. Famiglietti, R. Bindlish, M. H. Cosh, W. Crow, T. J. Jackson (2005), Ground-Based Estimation of Footprint Mean Soil Moisture during SMEX02 and Comparison to AMSR-E Estimates, International Geoscience and Remote Sensing Symposium, Seoul, Korea.
- **Ryu, D.**, J. S. Famiglietti, R. Bindlish, M. H. Cosh, and T. J. Jackson (2005), Characterization of Footprint-Scale Surface Soil Moisture Distribution Observed during Soil Moisture Experiments in 2004 (SMEX04) Using Gaussian Mixture Model, Eos Trans. AGU, 86(18), Jt. Assem. Suppl., Abstract H41A-09.
- **Ryu, D.**, J. S. Famiglietti, R. Bindlish, and T. J. Jackson (2004), Estimation of the Spatial Distribution of Surface Soil Moisture Using Non-Stationary Geostatistical Methods, Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract H13C-0434.
- **Ryu, D.**, and J. S. Famiglietti (2004), Geostatistical Aspects of Scaling Behavior Observed in Regional Scale Surface Soil Moisture Fields, in Proceedings of the 2nd international CAHMDA workshop on: The Terrestrial Water Cycle: Modelling and Data Assimilation Across Catchment Scales, edited by A. J. Teuling, H. Leijnse, P. A. Troch, J. Sheffield and E. F. Wood, pp. 50, Princeton, NJ.
- **Ryu, D.**, and J. S. Famiglietti (2003), Spatial Correlation Structure of Soil Moisture from Aircraft to Satellite Footprint Scales During SGP97 and SGP99, Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract H22B-0923.
- **Ryu, D.**, and K. -K. Lee (2000), Modeling Infiltration and Redistribution for Multistorm Runoff Events in a Horizontally Heterogeneous Plane Field, Eos Trans. AGU, 81(48), Fall Meet. Suppl., Abstract H22C-30.
- **Ryu, D.**, and K. -K. Lee (2000), Estimation of Hydraulic Properties around a Gas Storage Cavern from Hydraulic Responses to Gas Pressure Fluctuation, Korea Society of Soil and Groundwater Environment, Seoul, Korea.