

NITHYA RAJAN

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Education

2007 Ph. D., Agronomy, Texas Tech University, Lubbock, TX.

2004 M. Sc., Soil Science & Agri. Chemistry, A.N.G.R. Agri. University, Hyderabad, India.

2001 B. Sc., Agriculture, Kerala Agricultural University, India.

Professional Experience

7/ 2010 – 11/2014 Assistant Professor, Texas A&M AgriLife Research, Vernon, TX.

3/ 2008 – 6/ 2010 Post-doctoral Research Associate, Texas Tech University, Lubbock, TX.

2005 –2007 Graduate Research Assistant, Texas Tech University, Lubbock, TX.

Research Interests

My current research addresses soil and water management of agricultural crops. It integrates measurements by a variety of techniques such as remote sensing, simulation modeling, soil and boundary layer flux (CO₂, water vapor, and greenhouse gases) measurements. It involves scaling up point measurements to the field and landscape scales using modeling and geospatial data. It also includes the development of decision support tools for irrigation management. My other research interests include large scale agroecosystem studies addressing issues such as land use change, water sustainability, and climate change.

Professional Activities

- Member, ASA Early Career Members Committee (2015-2016)
- Member, Grant Review Panel, U.S. Carbon Cycle Science Program offered jointly by NASA, NIFA, DOE, and NOAA (2014).
- Associate Editor, *Agronomy Journal* (2009-Present)
- Chair, Soil Plant Water Relations Community of American Society of Agronomy, Climatology and Modeling Section (2013)
- Symposium Organizer and Moderator, “Monitoring and Modeling Evaporation, Carbon and Other Ecosystem Fluxes: I”. ASA-CSSA-SSSA 2013 International Annual Meetings, Nov. 3-6, Tampa, FL.
- Member, Diversity in Agronomy, Crops, Soils, and Environmental Sciences Committee, American Society of Agronomy (2012-14).
- Member, ASA National Graduate Student Speech Contest Committee (2010-2012)
- Symposium Organizer, “Satellite serving agriculture: Honoring the achievements of Dr. Paul Doraiswamy”. ASA 2012 International Annual Meetings, Oct. 21- 24, Cincinnati, OH.
- Chair, Airborne and Satellite Remote Sensing Community of American Society of Agronomy, Climatology and Modeling Section (2012)
- Secretary/Treasurer & Webpage Developer, Association of Agricultural Scientists of Indian Origin (Oct 2008 – Oct 2012).
- Reviewer: *Agronomy Journal*, *Ecological Modeling*, *Precision Agriculture*, *Remote Sensing*, *Remote Sensing Letters*, *Transactions of ASABE*, *Bioenergy Research*

Selected Refereed Journal Articles (Total 20)

1. Attia, A., N. Rajan, G. Ritchie, S. Cui, A. Ibrahim, D. Hays, Q. Xue, and J. Wilborn. Yield, Quality, and Spectral Reflectance Responses of Cotton under Sub-Surface Irrigation. *Agronomy Journal* (In Press)
2. **Rajan, N.**, S. J. Maas, R. Kellison, M. Dollar, S. Cui, S. Sharma, and A. Attia. 2015. Emitter uniformity and application efficiency for center-pivot irrigation systems. *Irrigation and Drainage* DOI: 10.1002/ird.1878.
3. **Rajan, N.**, S. Maas and S. Cui. 2014. Mega-drought effects on evapotranspiration and energy balance of a pasture in the Southern Great High Plains. *Ecohydrology*, DOI: 10.1002/eco.1574.
4. **Rajan, N** and S. Maas. 2014. Spectral crop coefficient for estimating crop water use. *Advances in Remote Sensing*, 3(3): 197-207.
5. **Rajan, N.**, N. Puppala, S. Maas, R. Nuti, P. Payton. 2014. Aerial remote sensing of peanut ground cover. *Agronomy Journal* 106(4): 1358-1364.
6. Cui, S., **N. Rajan**, S. J. Maas and E. Youn. 2014. An automated soil line identification method using relevance vector machine, *Remote Sensing Letters*, 5: 205-2012.
7. Govind, A., S. Cowling, J. Kumari, N. Rajan, and A. A. Yaari. 2014. Distributed modeling of ecohydrological processes at high spatial resolution over a landscape having patches of managed forest stands and crop fields in SW Europe. *Ecological Modelling*, doi:10.1016/j.ecolmodel.2014.10.019.
8. Thorp, K. R., S. Ale, M. Bange, E. Barnes, G. Hoogenboom, R. Lascano, A. McCarthy, S. Nair, J. Paz, **N. Rajan**, R. Reddy, G. Wall, and J. White. 2014. Development and application of process-based simulation models for cotton production: A review of past, present, and future directions, *Journal of Cotton Science*, 18: 10-47.
9. **Rajan, N.**, S. J. Maas and S. Cui. 2013. Extreme drought effects on carbon dynamics of a pasture in the semi-arid Southern High Plains. *Agronomy Journal* 105(6): 1749-1760.
10. Snowden, C., J. Cave, W. Keeling, **N. Rajan** and G.L. Ritchie. 2013. Boll distribution effects on yield and micronaire under multiple irrigation levels. *Agronomy Journal* 105(6): 1536-1544.
11. **Rajan, N.**, S. J. Maas, and J. C. Kathilankal. 2010. Estimating crop water use of cotton in the Southern High Plains. *Agronomy Journal* 102(4): 1641-1651.
12. Maas, S. J., and **N. Rajan**. 2010. Normalizing and converting image DC data using scatter plot matching. *Remote sensing* 2(7): 1644-1661.
13. **Rajan, N.**, and S. J. Maas. 2009. Mapping crop ground cover using airborne multispectral digital imagery. *Precision Agriculture* 10(4): 304-318.
14. Maas, S. J., and **N. Rajan**. 2008. Estimating ground cover of field crops using medium-resolution multispectral satellite imagery. *Agronomy Journal* 100(2): 320-327.

Advising

Post-doctoral Research Associate: Dr. Ahmed Attia, Jan 2015 – Present; Dr. Song Cui, Oct 2012 – July 2013 (Current position: Assistant Professor, Middle Tennessee State University).

Graduate Students: Currently advising 2 Ph.D. students; Served as Chair of a Ph.D. student graduated in Dec, 2014. Serving as a member in dissertation committee of 2 Ph.D. students and 1 M.S. student; Served as a member in dissertation committee of 1 Ph.D. student and 1 M.S. student.

Grants

Awarded grants totaling approximately **\$2,000,000** over 4 years and approximately **\$900,000** to Rajan's program.