

DR SUMIT SEN

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Job Title Assistant Professor in Hydrology

Professional and Education Qualifications

2001 BS Agricultural Engr., Allahabad Agricultural Institute DU, Allahabad, India
2004 MS Biological and Agricultural Engr., University of Arkansas, Fayetteville, AR, USA
2009 PhD Civil Engr., (*Runoff Generation in Pastures of the Appalachian Plateau Region of North Alabama*) Auburn University (AU), Auburn, AL, USA

Employment History

2012 to date Assistant Professor, Dept., of Hydrology, IIT Roorkee.
2011 to 2012 Fellow, Ashoka Trust for Research in Ecology and The Environment, India.
2009 to 2011 Post-doctoral Fellow, Biosystems Engineering Department, AU.
2005 to 2009 Graduate Research Assistant, Biosystems Engineering Department, AU.
2002 – 2004 Graduate Research Assistant, Biological and Agricultural Engr., University of Arkansas.

Research Expertise

Watershed management and modeling; Experimental hydrology

Selected Relevant Research Projects (reverse chronological order)

2013 - 2016 *Understanding Hydrogeological Processes and Their Impacts on Water Security in the Tehri-Garhwal Region of Uttarakhand*. Sponsored by Ministry of Human Resources, IIT Roorkee (**SEED Grant**)
2014 - 2017 *Understanding Relationship between Infiltration Trade-off Hypothesis and Surface Runoff Generation Mechanisms*. Sponsored by Department of Science and Technology, Government of India. **Young Scientist Award**

Selected Recent Relevant Publications (reverse chronological order)

Noori, N., Kalin L., Sen S., Srivastava P., C. Lebleu (2016) Identifying Areas Sensitive to Land Use/ Land Cover Change for Downstream Flooding in a Coastal Alabama Watershed, *Regional Environmental Change*. DOI 10.1007/s10113-016-0931-5
Adeba, D., Kansal, M.L., Sen, S. (2016) Economic Evaluation of Proposed Alternatives of Inter-basin Water Transfer from BaroAkobo to Awash Basin in Ethiopia. *Sustainable Water Resources Management*, (in review).
Adeba, D., Kansal, M.L., Sen, S. (2015) Assessment of Water Scarcity and its Impacts on Sustainable Development in Awash Basin, Ethiopia. *Sustainable Water Resources Management*, 1 (1): 71-87.
Madolli, M.J., Sen, S., Jain, M.K. (2014) Trends in Temperature and Precipitation in Karnataka, India. *Hydrology Journal*, 37(1-4): 61-70.
Madolli, M.J., Sen, S., Shinde, A. (2014) Effect of Climate Change on Rainfall Pattern and Socioeconomic Condition for Karnataka State. *Proceedings of International conference entitled "Green India: strategic knowledge for combating climate change-prospects and challenges."* 304-312.
Lamba, J., Way, T.R., Srivastava, P., Sen, S., Wood, C.W., Yoo, K.H. (2013) Nutrient Loss in Leachate and Surface Runoff from Surface-Broadcast and Subsurface-Banded Broiler Litter. *J. Environmental Quality*, 42: 1574-1582.
Lamba, J., Way, T.R., Srivastava, P., Sen, S., Wood, C.W., Yoo, K.H. (2012) Surface Transport of Nutrients from Surface-Broadcast and Subsurface-Banded Broiler litter. *Trans. of ASABE*. 55 (3): 979-985.
Sen, S., Srivastava, P., Dane, J.H., Meng, H., Clement, P.T. (2011) Application of HIRO2 Hydrologic Model for Simulating Hortonian Overland Flow on a Pasture Hillslope in North Alabama. *J. Soil & Water Conservation*, 66 (6): 411-422.

- Sen, S., Srivastava, P., Dane, J.H., Yoo, K.H., Shaw, J.N. (2010) Spatial-temporal variability and hydrologic connectivity of runoff generation areas in a North Alabama pasture - implications for phosphorus transport. *Hydrological Processes*, 24(3): 342-356.
- Sen, S., Srivastava, P., Yoo, K.H., Dane, J.H., Shaw, J.N., Kang, M.S. (2008) Runoff Generation Mechanisms in Pastures of the Sand Mountain Region of Alabama – A Field Investigation. *Hydrological Processes*, 22 (21): 4222-4232.
- Sen, S., Haggard, B.E., Chaubey, I., Brye, K.R., Costello, T.A., Matlock, M.D. (2007) Sediment Phosphorus Release at Beaver Reservoir, Northwest Arkansas, USA, 2002–2003: A Preliminary Investigation. *Water Air & Soil Pollution*. 179: 67–77.
- Chaubey, I., Matlock, M., Costello, T. A., Haggard, B. E., Garg, V., Sen, S., White, K. L., Davis, R. K. (2005) Development of a Decision Support System and Data Needs for the Beaver Lake Watershed. Prepared for Arkansas Soil & Water Cons. Comm.

Book Chapter

- Panda, S.S., E. Mason, **S. Sen**, and H.W. Kim (2016). Forest Hydrology Management Decision Support with Geospatial Technology. *In: Forest Hydrology: Management and Assessment*, Amatya, D.M., Williams, T.M., Bren, L. and de Jong, C. (eds), CABI, Wallingford. ISBN: 9781780646602 (in press).

Thesis Advisor:

Seven master students graduated in last four years under single supervision and four under co-supervision. One PhD dissertation completed in Dec., 2016 and three PhDs and two Masters students research work is on-going at IITR.