

Dr. Rupak Sarkar

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RESEARCH INTERESTS

- Hillslope hydrology
- Hydrological modeling of hilly watersheds with rapid preferential flow component
- Hydrological observations, predictions, and climate change
- Agricultural water management



EDUCATION

- 2011 **Ph.D. in Civil Engineering (Water Resources Engineering)** from Indian Institute of Technology Guwahati, India
- 2005 **M. Tech in Agricultural Engineering (Irrigation & Drainage Engineering)** from G.B. Pant University of Agriculture & Technology, India
- 2002 **B.Tech in Agricultural Engineering** from Bidhan Chandra Krishi Viswavidyalaya, India



WORK EXPERIENCE

- 2007 - present Assistant Professor at Faculty of Technology (UBKV), India
- Associated with teaching of different undergraduate & postgraduate courses of hydrology, soil & water engineering, agricultural water management, and remote sensing & GIS.
- 2005 - 2006 Junior Research Fellow at Indian Institute of Technology Guwahati, India
- Associated with the research project 'Analysis of water balance in rice agriculture system using a distributed hydrological model' sponsored by the Space Applications Centre, Indian Space Research Organization.



PUBLICATIONS

Refereed Articles:

1. **Rupak Sarkar** and Subashisa Dutta (2014). Parametric study of a physically based plot-scale hillslope hydrological model through virtual experiments. *Hydrological Sciences Journal*, DOI:10.1080/02626667.2014.897407 (Accepted Manuscript in Production).
2. Pori Das, Aminul Islam, Subashisa Dutta, Amit K. Dubey, and **Rupak Sarkar** (2014). Estimation of runoff curve numbers using a physically-based approach of preferential flow modelling, *IAHS Publication 363* (In Press).

3. Rishabh Dev Sharma, **Rupak Sarkar**, and Subashisa Dutta (2013). "Run-off generation from fields with different land use and land covers under extreme storm events." *Current Science*, 104(8): 1046-1053.
4. **Rupak Sarkar** and Subashisa Dutta (2012). Field investigation and modeling of rapid subsurface stormflow through preferential pathways in a vegetated hillslope of northeast India. *Journal of Hydrologic Engineering*, 17(2): 333-341.
5. Sangeeta Shougrakpam, **Rupak Sarkar**, and Subashisa Dutta (2010). An experimental investigation to characterise soil macroporosity under different land use and land covers of northeast India. *Journal of Earth System Science*, 119(5): 655-674.
6. **Rupak Sarkar** and Subashisa Dutta (2009). An experimental and modelling investigation of macropore dominated subsurface stormflow in vegetated hillslopes of northeast India. In Yilmaz, K.K, Yucel, I., Gupta, H.V., Wagener, T., Yang, D., Savenije, H., Neale, C., Kunstmann, H., and Pomeroy, J. (Eds.) *New approaches to hydrological prediction in data-sparse regions, IAHS Publication 333*, 145-152.
7. Sudipta Kumar Mishra, **Rupak Sarkar**, Subashisa Dutta and Sushma Panigrahy (2008). A physically based hydrological model for paddy agriculture dominated hilly watersheds in tropical region. *Journal of Hydrology*, 357(3-4): 389-404.
8. **Rupak Sarkar**, Subashisa Dutta and Sushma Panigrahy (2008). Characterizing overland flow on a preferential infiltration dominated hillslope: Case study. *Journal of Hydrologic Engineering*, 13(7): 563-569.
9. **Rupak Sarkar**, Subashisa Dutta and Sushma Panigrahy (2008). Effect of scale on infiltration in a macropore dominated hillslope. *Current Science*, 94(4): 490-494.
10. **Rupak Sarkar**, Shiv Kumar, Yogendra Kumar and H.C. Sharma (2007). Groundwater modelling for prediction of water table depth in Ramganga-Bahgul interbasin of Uttar Pradesh. *Hydrology Journal*, 30(1-2): 123-133.

Conferences:

11. **Rupak Sarkar** and Subashisa Dutta (2013). An insight into the hydrological extremities in a vegetated hillslope of Northeast India. In '*Holistic Scientific Approach using Integrated Geophysical Studies for the Management of Natural Hazards*'. Organized by the North Eastern Space Applications Centre (NESAC), Govt. of India, Department of Space, 22-23 April, 2013, Umiam, Meghalaya, India.
12. **Rupak Sarkar** and Subashisa Dutta (2008). An experimental and modeling investigation on macropore dominated subsurface storm flow in vegetated hillslopes of North-East India. In the International Workshop on '*Agricultural Ecosystem and Sustainable Development in Brahmaputra Basin*.' Organized by the Gauhati University, India and Centre for Southeast Asian Studies, Kyoto University, Japan, 19-20 December, 2008, India.
13. **Rupak Sarkar**, Shyamal Ghosh, Subashisa Dutta and Sushma Panigrahy (2007). Subsurface stormflow in a preferential infiltration dominated natural hillslope in Brahmaputra River Basin, In XXVI National Seminar on Hydrology '*Rainfall Versus Water Resources in North-East India*'. Organized by: Association of Hydrologists of India in association with Department of Geography, North-Eastern Hill University, 26th - 28th October, 2007, Shillong, India.
14. **Rupak Sarkar**, Subashisa Dutta and Sushma Panigrahi (2006). Hydrological response of hillslopes in the Brahmaputra Basin: An experimental and modeling investigation. In '*An International Perspective on Environmental and Water Resources*', Organized by EWRI of ASCE and IIT Kanpur, December 18-20, 2006, New Delhi, India.
15. Subashisa Dutta and **Rupak Sarkar** (2006). Subsurface stormflow study for hydrological extremities management in North-Eastern India. In '*NEGeo-2006 – Developing North East Geospatially*'. September 21-22, 2006, Guwahati, India
16. **Rupak Sarkar**, Shiv Kumar, Yogendra Kumar and H. C. Sharma (2006). Ground water studies of Ramganga-Bahgul interbasin of Uttar Pradesh. In '*National Conference on Hydrology*', August 24-26, 2006, Chennai, India.

Technical Reports/Books:

17. **Rupak Sarkar** (2012). *Groundwater modelling: A comparison between multiple regression and artificial neural network approaches*, LAP Lambert Academic Publishing, Germany, ISBN: 978-3-659-25948-7, pp. 1-137.
18. **Rupak Sarkar**, Subashisa Dutta, S.K. Dash, Sushma Panigrahy and Shyamal Ghosh (2008). *Analysis of water balance in rice agriculture system using a distributed hydrological model*. Project Report No. CE/P/SD/01.
19. Subashisa Dutta and **Rupak Sarkar** (2006). *Digital Image Processing*. Lecture notes of the Training Programme “Geo-Informatics and its Applications”, held at IIT Guwahati, India, 18-20 September, 2006.



RESEARCH PROJECT

“Improving water use for dry season agriculture by marginal and tenant farmers in the Eastern Gangetic Plains”

- A multi-country (Nepal & India) and multi-institutional project to be funded by the Australian Centre for International Agriculture Research (ACIAR) and the International Water Management Institute (IWMI) will be the implementing institution.

Role: **Principal Investigator (PI)**

Expected budget grant for the University: **\$90000 (AUD)**



RECENT REVIEW ASSIGNMENTS

1. Journal of Hydrologic Engineering (American Society of Civil Engineers)
2. Irrigation and Drainage (Wiley)
3. Advances in Water Resources (Elsevier)
4. Geocarto International (Taylor & Francis)



PROFESSIONAL MEMBERSHIPS

1. Member of the International Association of Hydrological Sciences (ID: 12092)
2. Life Member of the Indian Association of Hydrologists (ID: LM-1712)
3. Member (S.M. ASCE) of the American Society of Civil Engineers (ID: 478951)