

**Sarit Kumar Das***DST-INSPIRE Faculty*

Address: Department of Civil Engineering  
IIT Roorkee, Roorkee, Uttarakhand,  
PIN-247667, India

Mobile: +91 94-3249-2170  
Email ID: saritkdas.fce@iitr.ac.in  
Alternate ID: saritkd81@gmail.com

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**EDUCATION****Ph.D.** in Hydraulics and Water Resources Engineering

Indian Institute of Technology, Kharagpur

Thesis Defended on: *September, 30, 2015*

Title of the Thesis: *Hydrometeorological Approach for Probabilistic Soil Moisture Simulation using Climate Inputs*

*Research Projects*

- Title: *Probabilistic Estimation of Soil Moisture from RISAT1 Data along with Uncertainty Quantification*
  - Sponsored by: *Indian Space Research Organization (ISRO), Government of India*
- Title: *Managing change in Soil Moisture and Agricultural Productivity under a Global Warning scenario using a Catchment Scale Climate Change Assessment Framework*
  - Sponsored by: *Department of Science and Technology, Government of India*

**M.S.** in Environmental Engineering

University of New Orleans, New Orleans, USA

Achieved: December, 2009

Thesis: *Monitoring and Inverse Dispersion Modeling of VOCs in MSW Landfill**Research Project*

- Title: *Landfill Gas Management*
  - Sponsored by: *River Birch Inc., Avondale, LA, USA*

**M.Tech.** in Environmental Science and Engineering

Indian Institute of Technology, Bombay. Mumbai, India

Achieved: August, 2007

Thesis: *Environment Management Plan for Ship Breaking Industry in India**Research Project*

- Title: *Environmental Management of Ship Breaking Industry in India*
- Sponsored by: *European Union*

**B.E. in Civil Engineering**

Bengal Engineering and Science University, Shibpur. India

Achieved: June, 2004

Senior Design Project: Planning and Design of an Industrial Complex

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**TEACHING**

- **IIT Roorkee, Roorkee (September 5<sup>th</sup>, 2016 to present)**
  - Open Channel Hydraulics and Hydrology
  - Advance Engineering Hydrology
- **NIT Sikkim, Ravangla (January, 2016 to August, 2016)**
  - Open Channel Hydraulics and Hydrology
  - Environmental Engineering
  - Remote Sensing and GIS Applications
- **IIT Kharagpur, Kharagpur (January, 2010 to June, 2015)**
  - Applied Hydrology
  - NPTEL course on Probability and Statistics in Civil Engineering
  - Fluid Mechanics
- **University of New Orleans, New Orleans (January, 2008 to December, 2009)**
  - Environmental Chemistry Laboratory (2 terms)
  - Air Pollution Control
  - Air Pollution Meteorology and Atmospheric Dispersion Modeling
- **IIT Bombay, Mumbai (July, 2005 to June, 2007)**
  - Environmental Chemistry Laboratory (2 terms)
  - Pollution Control
  - Environmental Statistics

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**JOURNAL PUBLICATIONS**

- Pal, M., Maity, R., Suman, M., Das, S. K., Patel, P., and Srivastava, H. S. (2016) Satellite-Based Probabilistic Assessment of Soil Moisture Using C-Band Quad-Polarized RISAT1 Data. IEEE TGRS, 55 (3), 1351-1362.
- Das, S. K. and Maity, R. (2015). A hydrometeorological approach for probabilistic simulation of monthly soil moisture under bare and crop land conditions. AGU Water Resources Research, 51, 4, 2336–2355. DOI:10.1002/2014WR016043.
- Das, S. K. and Maity, R., (2014). On the Application of Probabilistic Hydrometeorological Simulation of Soil Moisture across Different Stations in India. Journal of Geoscience and Environment Protection, 2, 159-169. DOI:10.4236/gep.2014.23021.
- Das, S. K. and Maity, R., (2014). Potential of Probabilistic Hydrometeorological Approach for Precipitation-Based Soil Moisture Estimation. Journal of Hydrologic Engineering, ASCE, 20(4). ISSN 1084-0699/04014056(14).

- Das, S.K. and Maity, R., (2013). Probabilistic Simulation of Surface Soil Moisture Using Hydrometeorological Inputs. ISH Journal of Hydraulic Engineering, 19(3). DOI:10.1080/09715010.2013.798907.

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#### CONFERENCE PUBLICATIONS

- Pal, M., Suman, M., Das, S. K. and Maity, R., 2017. *Probabilistic Assessment of Soil Moisture using C-band Quad-polarized Remote Sensing Data from RISAT1*, EGU General Assembly 2017, Vienna, Austria, April 23–28, 2017.
- Das, S. K. and Maity, R., 2016. *Copula-based Probabilistic Estimation of Soil Moisture and its Potential Application in Air Pollution Meteorology*, AGU Fall Meeting, San Francisco, December 12-16, 2016.
- Das, S. K. and Maity, R., 2014. *On the Application of Probabilistic Hydrometeorological Simulation of Soil Moisture across different Stations in India*, 2nd Hydrology, Ocean, and Atmosphere Conference (HOAC), Beijing, June 13-15, 2014.
- Das, S. K. and Maity, R., 2012. *Probabilistic Simulation of Surface Soil Moisture Using Hydrometeorological Inputs*. HYDRO-2012: Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering; organized by IIT Bombay and Indian Society of Hydraulics at IIT Bombay, Mumbai, Dec 7-8, 2012.
- Mahindrakar, A. B., Das, S. K., Asolekar, S. R. and Kura, B. 2008. *Ship Breaking Industry in India: Assessment of Opportunities and Challenges*, ACE, AWMA, Portland, Oregon, 2008.
- Participated and presented a poster on *Status of Hazardous Waste Management in Indian Ship Breaking Industry* at Annual Conference, Indian Environmental Association, Goa, 2006.

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#### CONFERENCE PARTICIPATION AND COMPETITION

- Participated in International Conference on E-Waste Management in India: a Sustainable Solution; organized by Indian Institute of Chemical Engineers, Mumbai, May, 2007.
- Participated in the final round of *National Competition on Innovative Steel Structure Design*, organized by INS DAG, R&D division of Steel Authority of India (SAIL), 2004.

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#### RESEARCH PROJECT

- A project proposal titled as “*Monitoring, Modelling and Forecasting of Soil Moisture at Regional Scale to Assess the Impact of Climate Change on Air Pollution Meteorology*” is approved under the DST-INSPIRE Faculty Fellowship Award scheme.

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**PEER REVIEW**

- Invited to join as a reviewer in *Journal of Earth System Science of INDIAN ACADEMY OF SCIENCES*, published by Springer.
- Invited to join the *Scientific Committee* for the *1st International Conference on New Horizons in Green Civil Engineering (NHICE-01)* to be held on April 25 – 27, 2018 at Victoria, British Columbia, Canada.

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**CONSULTANCY**

- DPR Appraisal for Swachh Bharat Mission (Urban) in Sikkim: *appointed by* Urban Development and Housing Department, Government of Sikkim (2016).

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**EXPERIENCE**

- **January, 2016 to August, 2016:** *Assistant Professor* at Department of Civil Engineering, NIT Sikkim, Ravangla campus, Burfung Block, South Sikkim, India
- **August, 2010 to June, 2015:** *Senior Research Fellow* at Department of Civil Engineering, IIT Kharagpur, Kharagpur, WB, India
  - Carrying out extensive data processing, statistical modeling for hydrological and climate data under the research project titled as “*Managing Change in Soil Moisture and Agricultural Productivity under a Global Warming scenario using a Catchment Scale Climate Change Assessment Framework*”. Sponsored by DST, Government of India.
- **January, 2010 to August, 2010:** *Research Associate* at Department of Civil Engineering, IIT Kharagpur, Kharagpur, WB, India
  - Carried out extensive data and image processing for hydrological data under the research project titled as “*Streamflow Simulation Based on Remote Sensing Data*”. Sponsored by SAC, ISRO.
- **January, 2008 to December, 2009:** *Graduate Assistant* at University of New Orleans and Consultant to River Birch Inc., Avondale, Louisiana, USA.
  - Executed planning, designing and managing land gas treatment facilities, and monitoring and modeling of landfill gas emission.
  - Involved in writing two research project proposals of air pollution monitoring and environmental assessment.
- **July, 2004 to June, 2005:** *Assistant Engineer* at M.N. Dastur & Co., Kolkata, WB, India
  - Received rigorous training in analysis and design of industrial structures with computerized design and drafting
  - Attended a three-month long corporate training program on research, planning and design involving multiple engineering disciplines.

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**HONORS**

- **2016-2019:** Received *DST-INSPIRE Faculty Fellowship Award* by Department of Science and Technology, Government of India.
- **2008-2009:** Received *Crescent City Doctoral Scholarship* worth \$6000 annually for graduate study at *University of New Orleans*.
- **2005-2007:** Received scholarship worth INR5000 annually from *Human Resource Department, Government of India* for higher engineering study in India.

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**EVENT MANAGEMENT**

- Designed and organized Cool Summer Fest, 2007
  - A one day symposium cum technical festival on *Solution for Global Warming, IIT Bombay*, March, 2007, jointly sponsored by India's biggest oil company, *ONGC* and *Department of Research and Development, IIT Bombay*
  - Attended by experts from various engineering disciplines and social studies, management professionals, and members of the Energy Regulatory Board of the Government of Maharashtra State.

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**MEMBERSHIPS**

- American Geophysical Union (AGU)
- Air and Waste Management Association (A&WMA)
- American Society of Civil Engineers (ASCE)

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**ACTIVITIES**

- **2006-07:** Seminar Secretary, *Environmental Science and Engineering Association (ESEA)*
  - **2002-08:** Membership Committee Chair & Continuing Education Course Chair, India Section, *American Society of Civil Engineers (ASCE)*
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