

Curriculum Vita

Name : **Dasika Nagesh Kumar**
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Date of Birth : 15 July 1963
Citizenship : Indian
Marital status : Married and 2 children

Academic

Doctor of Philosophy (Ph D)

in Water Resources Systems on "*Integrated Modelling for Optimal Reservoir Operation for Irrigation*" in Civil Engineering Department, Indian Institute of Science, Bangalore. (1987-1992)

Master of Engineering (M E)

in *Hydrology and Water Resources Engineering* at Centre for Water Resources, Anna University, Madras. First class with Distinction. (1985-1987)

Bachelor of Technology (B Tech)

in *Civil Engineering*, V R Siddhartha Engineering College, Vijayawada, Nagarjuna University, Andhra Pradesh. First class with Distinction. (1980-1984)

Experience

Prof. Satish Dhawan Chair Professor, I.I.Sc., Bangalore (Oct 2018 to Oct 2021)

Professor in *Dept. of Civil Engg.*, I.I.Sc., Bangalore. (May 2008 to date)

Chairman, *Centre for Earth Sciences*, I.I.Sc., Bangalore. (Mar 2014 to Jan 2020)

Visiting Professor in *Dept. of Geoscience and Environment*, Ecole Nationale Supérieure des Mines de Saint-Etienne (EMSE), Saint-Etienne, France. (Aug to Dec 2012)

Associate Professor in *Dept. of Civil Engg.*, I.I.Sc., Bangalore. (May 2002 to May 2008)

Associate Professor in *Dept. of Civil Engg.*, I.I.T., Kharagpur. (Aug 2000 to May 2002)

BOYSCAST Fellow, Utah Water Research Lab, Utah State Univ., USA. (Jan to July 1999)

Assistant Professor in *Dept. of Civil Engg.*, I.I.T., Kharagpur. (Sept 1995 to Aug 2000)

Visiting Lecturer in *Dept. of Civil Engg.*, I.I.T., Kharagpur. (Feb 1994 to Aug 1995)

Scientist in *Water Resources Group* of National Remote Sensing Agency, Hyderabad, India. (Sept 1992 to Jan 1994)

Publications: 220

Books : 8 (4 are theses published as books)

Journals : 131 (International: 118; Indian: 13)

Chapters in Books: 16

Conferences : 63 (International: 43; National: 20)

Edited Books : 2

Technical Reports: 18

Membership in Professional Bodies

- Member, *American Society of Civil Engineers*, USA.
- Member, *American Geophysical Union*, USA.
- Member, *International Association of Hydraulic Engineering and Research (IAHR)*, Spain.
- Member, *International Association for Hydrological Sciences*, U.K.
- Member, *International Society on Multi Criteria Decision Making*, USA.
- Fellow, *Institution of Engineers (India)*, Calcutta, India
- Fellow, *Indian Society for Hydraulics*, Pune, India
- Member, *Indian Society of Remote Sensing*, Dehradun, India
- Member, *Indian Water Resources Society*, Roorkee, India

Awards & Distinctions

- ◆ **Fellow**, Indian Academy of Sciences, Bangalore, since 2022.
- ◆ More than **4,500 Citations** of research publications with **h-index of 38** and **i10 index of 87** (Source: Scopus)
- ◆ More than **8,100 Citations** of research publications with **h-index of 45** (Source: Google Scholar)
- ◆ **Prof. Satish Dhawan Chair Professor** award by I.I.Sc., Bangalore (2018–2021)
- ◆ **Editor in Chief**, *Journal of Water and Climate Change*, IWA Publishing, UK (2020 to date).
- ◆ Received **Best Associate Editor** Award from ASCE EWRI for the year 2014-15.
- ◆ Received **IBM Faculty Award - 2012**.
- ◆ **Editor-in-Chief**, *H2Open Journal*, IWA Publishing, UK, 2016-2020.
- ◆ **Member, International Editorial Board**, *Journal of Water and Climate Change*, IWA Publishing, London, UK, May 2019-2020.
- ◆ **Associate Editor**, *Journal of Hydrologic Engineering*, American Society of Civil Engineering (ASCE), USA, October 2007 to date.
- ◆ **Member, Editorial Board**, *The Open Hydrology Journal*, Bentham Science Publishers Ltd., USA, 2008-2018.
- ◆ **Associate Editor**, *ISH Journal of Hydraulic Engineering*, Indian Society for Hydraulics, Pune, India, 2013 to date.
- ◆ **Member, Editorial Board**, *Applied Computational Intelligence and Soft Computing*, Hindawi Publishing Corporation, Egypt, 2011-2020.
- ◆ **Associate Editor**, *Nonlinear Science Letters C: Nano, Biology and Environment*, Asian Academic Publisher Limited, 2011-2020.
- ◆ **Member**, Working Group on Climate Change, International Association of Hydraulic Engineering and Research (IAHR), Spain, Jul 2008-2018.
- ◆ **Member**, Task Team for 'Hydrological Modelling of Brahmaputra and Barak basins for flood forecasting using Doppler Weather Radar', Govt. of Assam, 2006.

- ◆ **Visitor's Nominee**, Faculty Selection Committee, Dept of Civil Engg., IIT Bombay, 2018-2020.
- ◆ **Member**, Selection Committee for recruitment of faculty, School of Water Resources, IIT, Kharagpur, 2010, 2012 & 2013.
- ◆ **Member**, Selection Committee for recruitment of faculty, Dept of Civil Engg., IIT, Delhi, May 2014.
- ◆ **Member**, Selection Committee for recruitment of faculty, Dept of Civil Engg., IIT, Bhubaneswar, June 2015.
- ◆ **Member**, Faculty Selection Committee, Centre for Atmospheric Sciences, IIT, Delhi, 2018,

2019.

- ◆ **Member**, Selection Committee for recruitment of faculty, Dept of Civil Engg., IIT, Roorkee, 2020.
- ◆ **Member**, Selection Committee for recruitment of faculty, Dept of Hydrology, IIT, Roorkee, 2020.
- ◆ **Member**, Selection Committee for recruitment of faculty, Dept of Water Resources Development and Management, IIT, Roorkee, 2020, 2021.
- ◆ **Member**, Selection Committee for recruitment of faculty, Dept of Civil Engg. IIT, Jammu, 2019, 2020.
- ◆ **Member**, Selection Committee for recruitment of faculty, Dept of Civil Engg. IIT, Hyderabad, 2019.
- ◆ **Member**, Faculty Selection Committee, Department of Civil Engineering, National Institute of Technology Karnataka, Surathkal, Nov 2011, 2019
- ◆ **Member**, Faculty Selection Committee, Department of Civil Engineering, S V University, Tirupathi, July 2009.
- ◆ **Member**, Faculty Selection Committee, JNTU Kakinada, May 2010.
- ◆ **Member**, Faculty Selection Committee, Department of Civil Engineering, Rajiv Gandhi University of Knowledge Technologies (RGUKT), Hyderabad, Feb & Aug 2011.
- ◆ **Member**, Faculty Selection Committee, Department of Civil Engineering, Jadavpur University, Kolkatta, Dec 2013.
- ◆ **Member**, Board of Appointment for selection of Lecturer, Reader and Professor in the Post-graduate Department of Civil Engineering, Bangalore University, 2003, 2005 & 2007.
- ◆ **Member**, Faculty Selection Committee, Department of Civil Engineering, Adama Science and Technology University, Adama, Ethiopia, July 2015.
- ◆ **External Expert**, Promotions Advisory Committee, Dept of Space, Bangalore, 2014, 2018, 2019, 2020, 2021.

- ◆ **Expert Member**, AICTE team to inspect private engineering colleges in Karnataka, 2005.
- ◆ **Expert Member**, Committee to Evaluate the Performance of Central Water and Power Research Station, Pune, July 2013.
- ◆ **Resource Person** for workshop on 'Curriculum for Post Graduate Education' in National Institute of Technology Karnataka, Surathkal, organized under the World Bank funded Technical Education Quality Improvement Program (TEQIP), Feb 2005.
- ◆ **Resource Person** for workshop on 'Curriculum for Post Graduate Education' in Sri Venkateswara Univ, Tirupathi, organized under the World Bank funded TEQIP, Feb 2008.

- ◆ **Reviewer** for more than **83 international journals** and **10 Indian Journals**.
- ◆ **Examiner** for more than **113 PhD theses** from India and abroad.
- ◆ **Reviewer** for several project proposals from DST SERB, CSIR, MoES, MoWR, MoEF, DST NRDMS, GIAN, IMPRINT etc.

- ◆ Recipient of Young Scientist project **award** from Department of Science and Technology, India under 'Young Scientist Scheme' to conduct research on *Artificial Neural Networks and their adaptability to Stochastic Hydrology*, 1997-99.
- ◆ Recipient of BOYSCAST fellowship **award** from Department of Science and Technology, India to Visit Utah Water Research Laboratory, Utah State Univ., Logan, USA for 6 months (3rd Jan to 2nd July '99) for collaborative research on Climate Hydrology.

- ◆ **Best Paper Award** for the paper *Optimal design of water distribution system using Linear*

Programming Gradient (LPG) method published in Journal of Indian Water Works Association for the year 1998.

- ◆ **Sir Arthur Cotton Memorial Medal** for the paper *Multicriterion Q-Analysis and Compromise Programming for Irrigation Planning*, published in Civil Engg Journal of Institution of Engineers (India) for the year 2001.
- ◆ **Member Secretary**, International Conference on Advances in Civil Engineering, IIT, Kharagpur, 3-5 Jan 2002.
- ◆ **Member**, Board of Studies in Civil Engineering (UG & PG), Bangalore University, Bangalore, for the period 2008-2011.
- ◆ **Member**, Board of Studies in Civil Engineering, Yogi Vemana University, Kadapa, for the period 2008-2011.
- ◆ **Member**, Board of Studies in Civil Engineering, for many engineering colleges.

Collaborations

National/International Universities/Institutions

- ◆ IRI for climate and Society and Columbia Univ., USA, through Prof Upmanu Lall.
- ◆ Dept of Civil Engg., Purdue Univ., USA, through Prof G.S. Rao
- ◆ Univ. of New South Wales, Sydney, Australia, through Prof Ashish Sharma
- ◆ Victoria Univ., Melbourne, Australia, through Prof Chris Perera
- ◆ Univ. of Adelaide, Adelaide, Australia, through Prof Martin Lambert
- ◆ Ecole Nationale Supérieure des Mines de Saint-Etienne, Saint-Etienne, France, through Prof Didier Gaillot
- ◆ International Water Management Institute, Colombo, Sri Lanka

- ◆ IIT, Kharagpur
- ◆ IIT, Bhubaneswar
- ◆ IIT, Delhi
- ◆ IIT, Bombay
- ◆ BITS - Pilani, Hyderabad
- ◆ Indian Agricultural Research Institute (IARI), Indian Council of Agricultural Research (ICAR), New Delhi

National/International organizations (Government & Non-Government)

- ◆ National Institute of Hydrology, Roorkee
- ◆ National Remote Sensing Centre, Hyderabad
- ◆ Bhakra Beas Management Board, Chandigarh
- ◆ Narmada Control Authority, Indore
- ◆ Water Resources Development Organization, Bangalore

**Sponsored Research & Consultancy
Sponsored Research Projects:**

Title	Funding Agency	Value (Rs.)	Duration	Investigators
Use of Climatic Inputs in Reservoir Operation Models	SERC, Dept. of Science and Technology, Govt. of India.	11,14,560	Jun 2004 to Jan 2008	D. Nagesh Kumar (PI) P.P. Mujumdar
Development of a Simputer-Based Decision Support System for Water User Associations in Canal Command Areas	NRDMS, Dept. of Science and Technology, Govt. of India.	8,90,299	Sep 2004 to Mar 2007	P.P. Mujumdar (PI) D. Nagesh Kumar
Assessment of Water Resources under Climate Change Scenarios at River Basin Scale	INCOH, Ministry of Water Resources, Govt. of India.	30,74,000	Feb 2006 to Feb 2009	P.P. Mujumdar (PI) D. Nagesh Kumar V.V. Srinivas
Managing Change in Soil Moisture & Agricultural Productivity under A Global Warming Scenario using A Catchment Scale Climate Change Assessment Framework	Australia India Strategic Research Fund, International Division, Dept. of Science and Technology, Govt. of India.	16,07,760 & Aus \$208,500 =1,11,98,760 (Aus\$1=46)	Jul 2009 to Jul 2012	D. Nagesh Kumar (PI) V.V. Srinivas Rajib Maity (IIT, Kharagpur) Ashish Sharma (PI) Univ. of New South Wales (UNSW), Sydney, Australia Rajmehrotra (UNSW, Australia)
Research, Education & Manpower Development in the Discipline of Earth Processes	Ministry of Earth Sciences, Govt. of India.	11,70,80,000	Oct 2009 to Oct 2014	Chairman, CEaS (Coordinator) D. Nagesh Kumar (PI) Kusala Rajendran (PI) Prosenjit Ghosh (PI) Sajeev Kirishnan (PI)
High-resolution modelling and assessment of climate-change impacts on water resources over India using the Canadian RCM	<i>Ministère du Développement Économique, de l'Innovation et de l'Exportation (PSR-SIIRI-499-Initiative Inde 2010)</i>	Can \$34,500 = 15,52,500 (Can \$1=45)	Sep 2010 to Dec 2011	Laxmi Sushama (PI) Univ. of Quebec at Montreal, Canada D. Nagesh Kumar (PI) V. V. Srinivas
What will the future be? Projecting	Australia India Strategic	29,33,600	2014 to	M. Sekhar (PI) D. Nagesh Kumar

environmental change in a warming world for semi-arid landscapes	Research Fund, International Division, Dept. of Science and Technology, Govt. of India.	Aus \$297,998 =1,66,87,888 (Aus\$1=56)	2017	Ashish Sharma (PI) Univ. of New South Wales (UNSW), Sydney, Australia Rajeswar Mehrotra (UNSW, Australia)
Impact Assessment of Climate Change on Hydro-meteorological processes and Water Resources of Mahanadi Basin	Ministry of Water Resources, Govt. of India.	1,25,64,839 IISc Component 99,40,141	2018 to 2021	V. V. Srinivas (PI) D. Nagesh Kumar Dr Arindam Sarkar IIT, Bhubaneswar
Advanced Research in Hydrology and Knowledge Dissemination	Ministry of Earth Sciences, Govt. of India.	4,68,07,200	2018 to 2023	P.P. Mujumdar (PI) D. Nagesh Kumar M.S. Mohan Kumar M. Sekhar V.V. Srinivas G. Bala V. Venugopal P. Ghosh R. Chakrabarti
Development of Bilinear and non-Linear Un-Mixing Tool for Hyperspectral Image Analysis	Space Applications Centre (SAC), ISRO, Ahmedabad (MAHTRAM program)	25,44,000	2019 to 2022	D. Nagesh Kumar (PI)
Rainfall-Runoff Modelling for Lower Godavari Basin in a Changing Climate	Council of Scientific and Industrial Research (CSIR), New Delhi	16,07,445	2019 to 2022	K. Srinivasa Raju BITS Pilani, Hyderabad. D. Nagesh Kumar (Co-PI)
INGENIoS; Indo-German Network of Environmental Systems-Hydrology	Indo-German Partnership in Higher Education (IGP), University Grant Commission, New Delhi	1,60,00,000	July, 2020 to June, 2024,	M. Sekhar (PI) D. Nagesh Kumar And others Germany: Prof. Dr. Karl Schneider (PI) Prof. Dr. Kirk Junker
Development and application of a	Science and Engineering	42,05,899	March, 2021 to	Rajarshi Das Bhowmik (PI)

stochastic rainfall generator (SRG) to account for unprecedented rainfall events	Research Board New Delhi		Sept., 2023	D. Nagesh Kumar
Hindon Roots Sensing (HIROS): River Rejuvenation through Scalable Water- and Solute Balance Modelling and Informed Farmers' Actions	Indo-Dutch, DST-NWO, TMD, DST, Govt of India	4,57,96,660 + € 699,938 = 5,90,00,000 (€1=84.30) IISc Component 1,21,15,480	2022 to 2026	D. Nagesh Kumar (PI) V. Rajendran & I. Idhaya, IIT, Roorkee B.S. Devendra & H.S. Jat, CSSRI, ICAR, Karnal. R.C.J. Coen, Wageningen Univ., & Gerrit Schoups, TU- Delft, The Netherlands
Total		35,04,32,952		

SERC – Science and Engineering Research Council
NRDMS – Natural Resources Data Management System
INCOH – Indian National Committee on Hydrology

Consultancy Projects:

Title	Funding Agency	Value (Rs.)	Duration	Co-Consultants
Review of Hydrology and Power Studies for KHEP Stage II	Karnataka Power Corp. Ltd., Bangalore	1,23,500	May '02 to Dec '03	P.P. Mujumdar
Flood Routing Studies	NAWAD Council, Madurai	50,400	Apr '04 to Jun '04	P.P. Mujumdar
Integrated Reservoir Operation Studies for Reservoirs in Narmada Basin	Narmada Control Authority, Indore	16,50,000	Feb 04 to date	P.P. Mujumdar
Water Res. Assessment and Management in Malaprabha Reservoir System of the Krishna River basin	IWMI, Colombo through their Hyderabad office	3,48,345	Jul '05 to Jul '06	V.V. Srinivas
Evaluation of Proposals for Development of Real-time DSS for Operational Mgmt of reservoirs of BBMB	Bhakra Beas Mgmt. Board (BBMB), Chandigarh	1,20,000	Jan '08 (One month)	-
Technical negotiations with selected consultant for development of RT-DSS for operation of reservoirs of BBMB	BBMB, Chandigarh	48,000	April '08 (One month)	-
Flood Routing Studies for Bhakra Reservoir	WAPCOS, Chandigarh	4,50,000	Jan '09 to Mar '09	-
Water Yield Estimates for Mahadayi River Basin	WRDO, Bangalore	12,80,000	Aug '10 to Apr '11	P.P. Mujumdar
Future Projections of Precipitation and Temperature for Different Climate Change Scenarios at Sites in Beas River Basin on Daily Time Scale	National Institute of Hydrology, Roorkee	4,95,000	Jul '12 to Apr '12	V.V. Srinivas
Performance Assessment of Identified Irrigation Tanks in Tamilnadu using Remote Sensing and GIS	Hindustan Unilever Foundation, Bangalore	8,43,300	Sep '15 to Apr '16	-
Assessment of Climate Change Impacts on Precipitation and Streamflow in Tunga Bhadra Basin	ACIWRM, Bangalore	36,80,000	Aug '16 to Jun '16	P.P. Mujumdar

Integrated Operation of Five Reservoirs System of Krishna River Basin in Andhra Pradesh and Telangana States	Water Resources Department, Vijayawada Govt. of Andhra Pradesh	9,55,269	Sep '17 to May '18	-
Total		1,00,43,814		

NAWAD – National Waterways Development; IWMI – International Water Mgmt Institute; WAPCOS – Water and Power Consultancy Services; WRDO – Water Resources Development Organization, Govt of Karnataka, Bangalore
 ACIWRM – Advanced Centre for Integrated Water Resources Management, Govt. of Karnataka

Earlier while working in IIT, Kharagpur (1994-2002)

- ❖ *Artificial Neural Networks and their adaptability to Stochastic Hydrology*, D.Nagesh Kumar, **sponsored** by Dept. of Science and Technology under 'Young Scientist Scheme', 1997-99.
- ❖ *Computer Assisted Instructions for Geotechnical Testing*, C.S. Rao, D. Nagesh Kumar, Jan '99 to July 2000, **sponsored** by AICTE.
- ◆ *Modifications/Alternatives for the proposed Stepped Spillway structure of Jambhira earth dam*, C.R.S.Pillai and D.Nagesh Kumar, **consultancy project** to Orissa state govt., 1995.
- ◆ *Rain Water Harvesting Scheme for BRNML*, S.N. Ghosh, V.R. Desai, D. Nagesh Kumar, **consultancy project** to Bharatiya Reserve Bank Note Mudran Limited (BRNML), Salboni, Midnapur District, West Bengal, 2001.

Short Term Courses/ Training Programs Organised

Sl. No.	Course	Sponsoring Agency	Duration	Target Group	Course Fee (Rs.)
1	Web-based Course on 'Optimization Methods'	NPTEL ^{&} , Ministry of Human Resource and Development, Govt. of India.	2004-2007 (course development time)	Open to staff and students of Engg. colleges	5,00,000
2	Streamflow Generation, Forecasting and Data Extension ⁺	Irrigation Mgmt. Training Institute (IMTI), Trichy, Tamilnadu	Nov. 11-23, 2002	Engineers of PWD, Govt. of Tamilnadu	3,60,000
3	Statistical Methods in Hydrological Data Processing ⁺	IMTI, Trichy, Tamilnadu	Feb. 17 to March 1, 2003	Engineers of PWD, Govt. of Tamilnadu	3,60,000
4	Open Channel Hydraulics ⁺	IMTI, Trichy, Tamilnadu	June 16-27, 2003	Engineers of PWD, Govt. of Tamilnadu	3,96,000
5	Open Channel Hydraulics [*]	IMTI, Trichy, Tamilnadu	May 02-06, 2005	Engineers of PWD, Govt. of Tamilnadu	2,64,000
6	Optimal Reservoir Operation [*]	Bhakra Beas Mgmt. Board (BBMB), Chandigarh	May 15-16, 2007	Engineers of BBMB, Chandigarh	1,20,000
7	Integrated Water Resources Management [@]	IMTI, Trichy, Tamilnadu	December 14-25, 2009	Engineers of PWD, Govt. of Tamilnadu	4,26,000
8	Remote Sensing and GIS Applications in Earth Sciences	Ministry of Earth Sciences, Govt. of India	November 15-20, 2010	Teachers from Engg colleges and Universities	2,50,000
9	Web-based Course on 'Water Resources Systems Planning and Management'	NPTEL ^{&} , Ministry of Human Resource and Development, Govt. of India.	2010-2012 (course development time)	Open to staff and students of Engg. colleges	5,00,000
10	Web-based Course on 'Remote Sensing'	NPTEL ^{&} , Ministry of Human Resource and Development, Govt. of India.	2010-2012 (course development time)	Open to staff and students of Engg. colleges	5,00,000
11	Hydrologic Impacts of Climate Change in Tungabhadra River Basin [*]	Advanced Center for Integrated Water Resources Management (ACIWRM), Govt. of Karnataka, Bangalore	July 24-29, 2017	Engineers of Water Resources Dept., Govt of Karnataka	Part of a Project
12	Integrated Water Resources Management	ACIWRM, Bangalore	Oct 23 – Nov 04, 2017	-do-	25,00,000 (approx..)

	(IWRM) [§]				
13	Basic Hydrology [*]	ACIWRM, Bangalore	July 16-28, 2018	-do-	25,00,000 (approx..)
14	Remote Sensing and GIS Applications for Water Resources Management [§]	ACIWRM, Bangalore	Jul 30 – Aug 11, 2018	-do-	25,00,000 (approx..)
15	Basic Hydrology [*]	ACIWRM, Bangalore	July 15-27, 2019	-do-	25,00,000 (approx..)
16	Remote Sensing and GIS Applications for Water Resources Management [§]	ACIWRM, Bangalore	Nov 04-16, 2019	-do-	25,00,000 (approx..)
17	Advance Technologies for Water Resources Management [*]	National Water Academy, Central Water Commission, Govt, of India, Pune	March 09-13, 2020	Engineers of Central Water Commission, Govt, of India	20,00,000 (approx..)

[&] NPTEL – National Program on Technology Enhanced Learning

⁺ Jointly organized with Prof P P Mujumdar and Prof S Vedula

^{*} Jointly organized with Prof P P Mujumdar

[§] Jointly organized with Prof M S Mohan Kumar

[@] Jointly organized with Profs P P Mujumdar, M S Mohan Kumar, M Sekhar and V V Srinivas

Earlier while working in IIT, Kharagpur (1994-2002)

- Organised AICTE sponsored Summer school on *System Techniques and Computer Applications in Water Resources*, 31 June - 11 July 1997, Civil Engg Dept., IIT, Kharagpur (Coordinator: D. Nagesh Kumar).
- Organised AICTE sponsored short term course on *Advanced Information Technology Applications to Civil Engineering*, 4-15 December 2000, Civil Engg Dept., IIT, Kharagpur, (Coordinators: D. Nagesh Kumar and S.V. Barai).

Research Interests

- Rainfall-Runoff Modeling
- Optimal Reservoir Operation Models
- Time Series Analysis in Hydrology
- Water Allocation Models
- Satellite Remote Sensing in Irrigation Management
- Disaggregation Models in Hydrology
- Artificial Neural Networks in Hydrology
- Multicriterion Decision Making (MCDM) in river basin development and management
- Fuzzy Approach for MCDM in river basin development and management
- Evolutionary Algorithms for optimal reservoir operation
- Climate Hydrology
- Impact of Climate Change on Hydrology of River Basins
- Downscaling of Climate Variables
- Detection and Attribution of Climate Change Impact on Water Resources
- Microwave Remote Sensing for Precipitation Estimation
- Microwave Remote Sensing for Soil Moisture Estimation
- Microwave Remote Sensing for Evapotranspiration Estimation
- Hyperspectral Remote Sensing for Crop Identification and Condition Monitoring
- Bayesian Network Analysis for Land Use Land Change (LULC) modeling and predication

Publications

(in chronological order)

Books

1. *Multicriterion Analysis in Engineering and Management*, K. Srinivasa Raju and D.Nagesh Kumar, PHI Learning Private Limited, New Delhi, India, ISBN 978-81-203-3976-7, 2010, Second print, March 2014, pp.288
2. *Floods in a Changing Climate: Hydrologic Modeling*, P. P. Mujumdar and D. Nagesh Kumar, International Hydrology Series, Cambridge University Press, Cambridge, U.K., ISBN-13: 9781107018761, pp. 188, 2012. DOI:10.1017/CBO9781139088428.
3. *Impact of Climate Change on Water Resources - With Modeling Techniques and Case Studies*, K. Srinivasa Raju and D. Nagesh Kumar, Springer Climate Series, Springer, ISBN 978-981-10-6110-3, pp. 266, December 2017.
4. *Fluid Mechanics - Problem Solving using MATLAB*, K. Srinivasa Raju and D. Nagesh Kumar, PHI Learning Pvt. Ltd., New Delhi, India, Print Book ISBN : 9789389347623, eBook ISBN : 9789389347630, pp. 368, July 2020.

Theses Published as Books

5. *Hydroclimatic Teleconnection: Indian Perspective*, Rajib Maity and D. Nagesh Kumar, Scholars' Press, Germany, ISBN-13: 978-3-639-66387-7, ISBN-10: 363966387X; EAN: 9783639663877, pp. 164, August 2014.
6. *Integrated Modelling for Optimal Reservoir Operation for Irrigation*, D. Nagesh Kumar, Scholars' Press, Germany, ISBN-13: 978-3-330-65352-8, ISBN-10: 3330653523, EAN: 9783330653528, pp. 140, July 2017.
7. *A Hydroclimatological Change Detection & Attribution Study over India*, Sonali Pattanayak and D. Nagesh Kumar, Scholars' Press, Germany, ISBN-13: 978-620-2-30557-0, ISBN-10: 6202305576, EAN: 9786202305570, pp. 244, September 2018.
8. *Hyperspectral Remote Sensing for Land Cover Classification*, Subir Paul and D. Nagesh Kumar, LAP Lambert Academic Publishing, Germany, ISBN: 9786202794930, pp. 188, August 2020.

Journals

9. *Stochastic models of streamflow - Some case studies*, P.P.Mujumdar and D.Nagesh Kumar, **Hydrological Sciences Journal**, IAHS Press, UK, Vol.35, No.4, August 1990, pp.395-410.
10. *Satellite Evaluation of Current status of Irrigation management in Rajolibanda diversion scheme command, Mahaboobnagar District, AP*, S.Thiruvengadachari, J.Harikishan and D.Nagesh Kumar, **NNRMS Bulletin**, Dept. of Space, Bangalore, NNRMS (B)-17, August 1993, pp.39-41.
11. *An integrated model for optimal reservoir operation for irrigation of multiple crops*, S.Vedula and D.Nagesh Kumar, **Water Resources Research** of American Geophysical Union, Vol. 32, No. 4, April 1996, pp. 1101-1108.
12. *Spectral analysis of Cauvery river flows*, D.Nagesh Kumar and P.P.Mujumdar, **Journal of Indian Water Resources Society**, Roorkee, Vol. 2, No. 3, July 1996, pp. 43-48.
13. *An integrated model for optimal reservoir operation for irrigation of multiple crops*, S.Vedula and D.Nagesh Kumar, Reprinted, **Water Resources Journal** of UN-ESCAP, September 1996, pp. 57-66.
14. *Ranking of river basin planning alternatives using ELECTRE*, P.Anand Raj and D.Nagesh Kumar, **Hydrological Sciences Journal**, IAHS Press, UK, Vol.41, No.5, October 1996, pp. 697-713.

15. *Optimal design of water distribution system using Linear Programming Gradient (LPG) method*, D. Nagesh Kumar, T. Rama Mohana Rao and M. Bandyopadhyay, **Journal of Indian Water Works Association**, Vol. XXX, No. 2, April-June 1998, pp. 79-87. Received **best paper award**.
16. *Ranking multi criterion river basin planning alternatives using Fuzzy numbers*, P. Anand Raj and D. Nagesh Kumar, **Fuzzy Sets and Systems Journal**, Vol. 100, No. 1-3, November 1998, pp. 89-99.
17. *Ranking alternatives with Fuzzy weights using maximising set and minimising set*, P. Anand Raj and D. Nagesh Kumar, **Fuzzy Sets and Systems Journal**, Vol. 105, No. 3, August 1999, pp. 365-375.
18. *Multicriterion decision making in irrigation planning*, K. Srinivasa Raju and D. Nagesh Kumar, **Agricultural Systems**, Vol. 62, No. 2, November 1999, pp. 117-129.
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 210. *Analysis of Choatic Nature in All-India Daily Rainfall Data*, C.T. Dhanya and D. Nagesh Kumar, Proceedings of International Conference on Advances in Materials, Mechanics and Management, Eds. Ruby Abraham, S. Latheswary, and N. Unnikrishnan, Trivandrum, Kerala, India, Excel India Publishers, New Delhi, ISBN: 978-93-800043-65-4, Jan. 14-16, 2010, Vol. 1, pp. 396-403.
 211. *Selection of Suitable Irrigation Planning Strategy using S/N Ratio and TOPSIS*, K.Srinivasa Raju and D. Nagesh Kumar, Proceedings of Ninth International Conference on Hydro-Science and Engineering (ICHE 2010), in CD-ROM, Editors: V.Sundar, K.Srinivasan, K.Murali and K.P. Sudheer, Indian Institute of Technology Madras, Chennai, August 2-5, 2010, ISBN: 978-93-80689-01-2, pp. 646-654.
 212. *Predictability and Chaotic Nature of Daily Streamflow*, D. Nagesh Kumar , C.T. Dhanya, Proceedings of 34th IAHR World Congress - Balance and Uncertainty, in CD-ROM, Chief Editor: Eric M. Valentine, Brisbane, Australia, June 26 - July 1, 2011, ISBN: 978-0-85825-868-6, pp. 1427-1434.
 213. *Rain/ No Rain Classification over Tropical Regions using TRMM TMI*, Indu, J. and D.Nagesh Kumar, Poster in AGU Chapman Conference on Remote Sensing of the Terrestrial Water Cycle, Kona, Hawaii, USA, February 19-22, 2012.
 214. *Impact of Agricultural Intensification on the Water Resources in a Semi-Arid Catchment in India*, Reshmidevi, T.V. and D. Nagesh Kumar, Proceedings of 2012 International SWAT Conference, India Habitat Centre, New Delhi, India, July 18-20, 2012.
 215. *Identification of Prominent Spatio-Temporal Signals in Grace Derived Terrestrial Water Storage for India*, C. Banerjee and D. Nagesh Kumar, Proceedings of ISPRS Technical Commission VIII Symposium, Eds: V.K. Dadhwal, P.G. Diwakar, M.V.R. Seshasai, P.L.N. Raju, and A.Hakeem, Hyderabad, India, December 09-12, 2014, Vol. XL-8, pp. 333-338, doi:10.5194/isprsarchives-XL-8-333-2014.
 216. *Evaluation of TRMM Precipitation Products over Indian Subcontinent*, J. Indu and D.Nagesh Kumar, Proceedings of ISPRS Technical Commission VIII Symposium, Eds: V.K. Dadhwal, P.G. Diwakar, M.V.R. Seshasai, P.L.N. Raju, and A.Hakeem, Hyderabad, India, December 09-12, 2014, Vol. XL-8, pp. 355-358, doi:10.5194/isprsarchives-XL-8-355-2014.
 217. *Validation of Satellite Soil Moisture Retrievals using Precipitation Records in India*, L.Karthikeyan and D. Nagesh Kumar, Proceedings of ISPRS Technical Commission VIII

Symposium, Eds: V.K. Dadhwal, P.G. Diwakar, M.V.R. Seshasai, P.L.N. Raju, and A.Hakeem, Hyderabad, India, December 09-12, 2014, Vol. XL-8, pp. 367-370, doi:10.5194/isprsarchives-XL-8-367-2014.

218. *Prediction of Land Surface Temperature under Cloudy Conditions using Microwave Remote Sensing and ANN*, Shwetha H R and D. Nagesh Kumar, Proceedings of International Conference on Water Resources, Coastal and Ocean Engineering (ICWRCOE 2015), Ed: G.S. Dwarakish, NIT, Surathkal, India, March 12-15, 2015, Vol. 4, pp. 1381-1388, doi:10.1016/j.aqpro.2015.02.179

Edited Books:

219. **Advances in Civil Engineering**, Proceedings of International Conference on Advances in Civil Engineering, Jan 3-5, 2002, Volumes I & II, **Edited** by J.N. Bandyopadhyay and D.Nagesh Kumar, Allied Publishers, India, 2002.
220. **Advances in Water Resources and Transportation Engineering**, Select Proceedings of TRACE 2020, **Edited** by Yusuf A. Mehta, Iacopo Carnacina, D. Nagesh Kumar, K. Ramachandra Rao and Madhuri Kumari, Springer Nature, Switzerland, 2021. ISBN: 978-981-16-1303-6

Technical Reports

1. *Satellite evaluation of current status of command area management in RDS command, Mahaboobnagar Dt., A.P.*, S.Thiruvengadachari, J.Harikishan and D.Nagesh Kumar, Feb. 1993, National Remote Sensing Centre, Hyderabad.
2. *Diagnostic analysis of canal system performance in RDS command, Mahaboobnagar Dt., A.P. using satellite remote sensing techniques - report on 1991 & 1992 Kharif seasons*, S.Thiruvengadachari, J.Harikishan and D.Nagesh Kumar, Apr. 1993, National Remote Sensing Centre, Hyderabad.
3. *Evaluation of Irrigation water management in Bhadra Project command area through Satellite Remote Sensing techniques*, S.Thiruvengadachari, S.Jonna, P.V.Raju, C.S.Murthy and D.Nagesh Kumar, Dec. 1993, National Remote Sensing Centre, Hyderabad.
4. *Satellite Remote Sensing applications in RDS command area in Andhra Pradesh*, S.Thiruvengadachari, J.Harikishan and D.Nagesh Kumar, April 1994, National Remote Sensing Centre, Hyderabad.
5. *Modifications/Alternatives for the proposed Stepped Spillway structure of Jambhira earth dam*, C.R.S.Pillai and D.Nagesh Kumar, Consultancy Report to water resources dept. of Orissa state, April 1995, IIT, Kharagpur.
6. *Artificial Neural Networks and their adaptability to Stochastic Hydrology*, D.Nagesh Kumar, Report submitted to DST, September 1997.
7. *Hydrology and Power Studies for KHEP Stage II*, P.P. Mujumdar and D.Nagesh Kumar, Consultancy Report submitted to Karnataka Power Corporation Ltd., (KPCL), Bangalore, February 2004.
8. *Flood Routing Studies*, P.P. Mujumdar and D.Nagesh Kumar, Consultancy Report submitted to National Waterways Development Council, Madurai, Tamilnadu, June 2004.
9. *Integrated Reservoir Operation Studies for Reservoirs in the Narmada Basin, Discharge Data Consistency Checks*, P.P. Mujumdar and D.Nagesh Kumar, Consultancy Report submitted to Narmada Control Authority, Indore, October 2004.
10. *Use of climatic inputs in reservoir operation models*, D.Nagesh Kumar and P.P. Mujumdar, Report submitted to Dept of Science and Technology, New Delhi, October 2005.
11. *Water Resources Assessment and Management in Malaprabha Reservoir System of the Krishna River basin using AVSWAT, DEM and Particle Swarm Optimization*, D. Nagesh Kumar and V.V. Srinivas, Consultancy Report submitted to International Water

- Management Institute, Colombo, South Asia Regional Office, C/o ICRISAT, Patancheru, Hyderabad, Andhra Pradesh, July 2006.
12. *Integrated Reservoir Operation Studies for Reservoirs in the Narmada Basin*, P.P.Mujumdar and D.Nagesh Kumar, Consultancy Report submitted to Narmada Control Authority, Indore, October 2006.
 13. *Development of a Simputer-Based Decision Support System for Water User Associations in Canal Command Areas*, P.P.Mujumdar and D.Nagesh Kumar, DST Ref. No. ES/11/712/2003, Report submitted to NRDMS, Dept of Science and Technology, New Delhi, June 2007.
 14. *Assessment of Water Resources under Climate Change Scenarios at River Basin Scale*, P.P. Mujumdar, D. Nagesh Kumar, V.V.Srinivas, MoWR Ref No. 23/52/2006-R&D, Report submitted to Indian National Committee on Hydrology (INCOH), Ministry of Water Resources, New Delhi, May 2009.
 15. *Water Yield Estimates for the Mahadayi River Basin*, P.P. Mujumdar, D. Nagesh Kumar, T.V. Reshmidevi, Consultancy Report submitted to Water Resources Development Organization, Bangalore, July 2011.
 16. *Future Projections of Precipitation and Temperature for Different Climate Change Scenarios at Sites in Beas River Basin on Daily Time Scale*, D. Nagesh Kumar, V.V.Srinivas, Project No. CP 6376/0504/11, Consultancy Report submitted to National Institute of Hydrology, Roorkee, India, May 2012.
 17. *Use of climatic inputs in reservoir operation models*, D. Nagesh Kumar, DST Ref. No. ES/48/010/2003, Report submitted to Dept. of Science and Technology, New Delhi, September 2013.
 18. *Performance Assessment of Identified Irrigation Tanks in Tamilnadu using Remote Sensing and GIS*, D. Nagesh Kumar, Project No. CP 7173/0504/14, Consultancy Report submitted to Hindustan Unilever Foundation, Bangalore, India, January 2016.

Impact Factors of Journals in which my Papers are Published

Source: Journal Citation Report – 2018 published in 2019 (Thomson Reuters)

<https://www.researchgate.net/publication/333966041>

(updated on August 1, 2019)

	Journal	Impact Factor	No. of Papers
1	ISPRS Journal of Photogrammetry and Remote Sensing	6.942	2
2	Environmental Research Letters	6.192	1
3	IEEE Transactions on Geoscience and Remote Sensing	5.630	3
4	Journal of Hydrology	4.405	7
5	Water Resources Research	4.142	4
6	Agricultural Systems	4.131	1
7	Climate Dynamics	4.048	1
8	Advances in Water Resources	3.673	5
9	Journal of Geophysical Research-Atmospheres	3.633	4
10	International Journal of Climatology	3.601	4
11	Journal of Water Resources Planning and Management, ASCE	3.404	1
12	Hydrological Processes	3.189	9
13	Computers and Operations Research	3.002	1
14	Water Resources Management	2.987	12
15	Fuzzy Sets and Systems	2.907	2
16	Theoretical and Applied Climatology	2.720	3
17	Journal of Computing in Civil Engineering	2.554	1
18	Journal of Hydro-environment Research	2.548	2
19	International Journal of Remote Sensing	2.493	1
20	Nordic Hydrology (Hydrology Research)	2.475	2
21	Irrigation Science	2.440	1
22	Hydrological Sciences Journal	2.180	5
23	Climate Research	1.984	3
24	Flow Measurement and Instrumentation	1.977	1
25	Population and Environment	1.976	1
26	Journal of Hydroinformatics	1.908	1
27	Engineering Optimization	1.890	1
28	Atmospheric Science Letters	1.796	1
29	Journal of Hydrologic Engineering, ASCE	1.438	3
30	Journal of Irrigation and Drainage Engineering, ASCE	1.340	2
31	International Agrophysics	1.227	1
32	Irrigation and Drainage	1.027	2
33	Journal of Water and Climate Change	1.009	4
34	Current Science	0.756	1
35	Water Resources Journal	0.638	1

36	Australian Journal of Water Resources	-	1
37	Bimaquest	-	1
38	H2 Open Journal	-	1
39	ISH Journal of Hydraulic Engineering	-	3
40	Jalvignan Sameeksha (Hydrology Review)	-	1
41	Journal of Agricultural Physics	-	1
42	Journal of Applied Hydrology	-	1
43	Journal of Indian Institute of Science, IISc, Press	-	1
44	Journal of Indian Water Resources Society	-	1
45	Journal of Indian Water Works Association	-	1
46	Journal of Institution of Engineers (India)	-	1
47	Journal of Intelligent Systems	-	2
48	NNRMS Bulletin	-	1
49	Water Conservation Science and Engineering	-	2
50	Water Management	-	1
Total			113

Ph D theses Supervised (in reverse chronology)

1. Bayesian modelling of the land use land cover change (LULC) and its interaction with compound extreme events
Suchismita Subhadarsini, in progress.
2. *Soil Texture Mapping using Remote Sensing*
Ternikar Chirag Rajendra, in progress.
3. *Assessment of Multiple Modelling Approaches to Address the Quest for Physically Realistic Hydrologic Models*
Ashlin Ann Alexander, in progress.
4. *Hydrologic model development for spatially heterogeneous basins at multiple sites and for multiple variables using a layered parallel computing approach*
Saumya Srivastava, in progress.
5. *Hyperspectral Remote Sensing for Soil Classification and monitoring*
Elizabeth Baby George, in progress.
6. *Vegetation Monitoring using Hyperspectral Remote Sensing*
Subir Paul, 2020.
Presently working as Research Associate, ICWaR, IISc, Bangalore.
7. *GRACE-based Assessment of Climatic Controls on Hydrological Variables*
Chandan Banerjee, 2019.
Presently working as Associate Director, Water Solutions Lab, DCCC, IISc, Bangalore.
8. *Cauvery Water Monitoring using Isotope Chemistry*
Himanshu Bhagat, 2019.
9. *Soil Moisture Retrievals using Passive Microwave Satellite Data*
Karthikeyan Lanka, 2018.
Presently working as Assistant Professor, CSRE, IIT Bombay.
10. *Estimation of Daily Actual Evapotranspiration using Microwave and Optical Vegetation Indices for Clear and Cloudy Sky Conditions*
Shwetha H.R., 2017.
Presently working as Assistant Professor, Dept of Applied Mechanics, NIT, Surathkal.
11. *Detection of Trends in Rainfall of Homogeneous Regions and Hydro-Climatic Variables of Tapi Basin with their Attribution*
Ganesh D Kale, 2017.
Presently working as Assistant Professor, Dept of Civil Engg., NIT, Surat.
12. *A Hydroclimatological Change Detection and Attribution Study over India using CMIP5 Models*
Sonali Pattanayak, 2015
Presently working as Project Scientist, Divecha Centre for Climate Change, IISc, Bangalore.
13. *Uncertainty Analysis of Microwave Based Rainfall Estimates over a River Basin using TRMM Orbital Data Products*
Indu J, 2014
Presently working as Assistant Professor, Dept of Civil Engg., IIT Bombay.
14. *Hydroclimatological Modeling using Data Mining and Chaos Theory*
C.T. Dhanya, 2010.
Presently working as Associate Professor, Dept of Civil Engg., IIT Delhi.
15. *Impact of Climate Change on Hydrometeorology of Indian River Basin for IPCC SRES Scenarios*
A Anandhi, (jointly with Dr. V.V. Srinivas), 2007.
Presently working as Assistant Professor, Florida A&M Univ.
16. *Impact of large-scale coupled Atmospheric-Oceanic circulation on hydrologic variability*

and uncertainty through hydroclimatic teleconnection

Rajib Maity, 2007.

Presently working as Associate Professor, Dept of Civil Engg., IIT Kharagpur.

17. *Swarm Intelligence and Evolutionary Computation for Single and Multiobjective Optimization in Water Resource Systems*

M. Janga Reddy, 2007.

Presently working as Professor, Dept of Civil Engg., IIT Bombay.

in IIT, Kharagpur (1994-2002)

18. *Long-term and short-term optimal reservoir operation for flood control*

Falguni Baliarsingh, 2001.

Presently working as Professor, Dept of Civil Engg., KIT, Bhubaneswar.

19. *Multi criterion decision making in fuzzy environment for river basin development and management*

P.Anand Raj (jointly with Prof. G.L.N Sastry), 2000.

Presently working as Professor, Dept of Civil Engg., NIT Warangal.

M.Sc. (Engg.)

20. *Predictability of Nonstationary Time Series using Wavelet and Empirical Mode Decomposition based ARMA Models*

Karthikeyan Lanka, 2013

Presently working as Assistant Professor, CSRE, IIT Bombay.

M Tech / M.E. (PG) Projects guided (in reverse chronology)

1. *Deep Learning in Hydrology*

Chandra Prakash Tamang, 2020

2. *Optimal Reservoir Operation using Water Cycle Algorithm*

Mridupawan Deka, 2019

3. *Pluvial Flood Modeling for Bengaluru city: Integrating ANUGA, a 2D Hydrodynamic model, with GIS*

Ramesh K Banagar, 2018

4. *Soil Type Classification and Mapping using Hyperspectral and Multispectral Remote Sensing Data*

Pranab Baruah, 2017

5. *Unsupervised Hyperspectral Vegetation Unmixing using Hyperion Data*

Santhosh Kumar R, 2016

6. *Prioritization of Sub-catchments of Mahanadi Basin based on Geomorphology*

Anmol Jalali, 2015

7. *Comparative Study of Actual Evapotranspiration Estimated from MSEBAL and TSEB Models by Utilizing Landsat 8 Data*

Subir Paul, 2015

8. *Hydrological Modelling of Malaprabha Catchment using TOP MODEL*

Chandan Banerjee, 2013

9. *Delineation of Flood-prone Areas using Modified Topographic Index for Mahanadi Basin*

Apoorva R Shastry, 2013

10. *Analysis of Recession Flows*

Swagat Patnaik, 2013

11. *Statistical Analysis of Daily Rainfall over India using High Resolution IMD Gridded Data*

Anjana Devanand, 2012

12. *Modelling Uncertainty in Variables of Different GCMs and Prediction of Extreme Events of Rainfall over India*
Richa Ojha, 2011
13. *Estimation of Actual Evapotranspiration over Malaprabha River Basin using Remote Sensing and SEBAL Model*
John Chunda Hansdak, 2011
14. *Ant colony optimization for optimal design of water distribution systems*
G. Sasidhar, 2006.
15. *Hydrologic Time Series Analysis and Forecasting with Climatic Inputs*
Rajib Maity, 2004.
16. *Crop Classification using Multitemporal Imagery with Penalized Fuzzy C-Means Algorithm*
K. Laxmi Raju, 2003.

in IIT, Kharagpur (1994-2002)

17. *End Depth in Inverted Semicircular Channels: Experimental and Theoretical Investigations*
D. Ram Singh (Jointly with Dr. S. Dey), 2000.
18. *Optimal Reservoir Operation in Fuzzy Environment*
D.S.V. Prasad, 1999.
19. *Application of Genetic Algorithms for Optimal Reservoir Operation*
Ashok Kumar, 1999.
20. *River Flow Forecasting using Artificial Neural Networks*
T. Sathish, 1998.
21. *Application of Watershed Bounded Network Model for rainfall-runoff Modelling*
K.C. Swain, 1997.
22. *Model Investigations of Stepped Spillway*
P.C. Nayak, 1996.
23. *Optimal Design of Water Distribution System using Liner Programming Gradient Method*
T. Rama Mohana Rao (Jointly with Prof M. Bandyopadhyay), 1995.