Curriculum Vitae

SURESH MODALAVALASA

Date of Birth: 03-02-1989

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POSITIONS AND EDUCATION

Current Position: Research Associate

(Since 4th April 2022) Indian Institute of Technology Guwahati. A National Hydrology Project on "Study on river morphology and erosion patterns at the confluence of sea for Vamsadhara and Nagavali rivers to suggest sustainable protection measures for river bank erosion".

(Jan 2017- Nov 2021) Ph.D. (Doctor in Philosophy) - Completed
Indian Institute of Technology Guwahati
Assam, India

(Aug 2014- May 2016) Masters in Technology (M.Tech.)
Dept. of Civil Engineering
JNTU Kakinada, Andhra Pradesh, India.
» **% of Marks: 74**

(Aug 2006- May 2010) Bachelor of Engineering (B.E.)
Dept. of Civil Engineering
Andhra University College of Engineering,
Visakhapatnam, India
» **CGPA: 6.5 (10-point scale)**

(Jun 2004- Mar 2006) Intermediate (IPE)
MPC, Sri Chaitanya Junior college, Eluru
» **% of Marks: 91.2**

(March 2004) 10th Class (SSC)
KPDT High School, Eluru
» **% of Marks: 78.83**

RESEARCH AREAS

Fluvial Hydro-dynamics, River Modelling, River Ecology, Water and Environment, Satellite altimetry, CFD

RESEARCH WORK

Ph.D. thesis title "Influence of Green corridor and Bridge piers on River turbulence" by Experimental and Numerical Investigation. Under the guidance of Senior Prof. Subashisa Dutta, Professor, Dept. of Civil Engg, IIT Guwahati and Prof. Vinayak Kulkarni, Professor, Dept. of Mechanical Engg, IIT Guwahati. sponsored by Ministry of Human Resources and Development Fellowship, Govt. of India. In this research, objectives are comprised of (a) Green Corridor interactions between floodplain- channel transition, (b) Heterogeneous Green corridor effect on River turbulence, (c) Effect of Bridge piers and floodplain vegetation on channel hydraulics, (d) Numerical investigation on the effect of green corridor and Bridge piers on river turbulent structures.

PUBLICATIONS

1. **Modalavalasa, S**., Chembolu, V., Dutta, S. and Kulkarni, V., 2022. Combined effect of bridge piers and floodplain vegetation on main channel hydraulics. Experimental Thermal and Fluid Science, p.110669. https://doi.org/10.1016/j.expthermflusci.2022.110669

2. **Modalavalasa, S**., Chembolu, V., Kulkarni, V., Dutta, S. (2022). Numerical and Experimental Investigation of Effect of Green River Corridor on Main Channel Hydraulics. In: Chembolu, V., Dutta, S. (eds) Recent Trends in River Corridor Management. Lecture Notes in Civil Engineering, vol 229. Springer, Singapore. https://doi.org/10.1007/978-981-16-9933-7_11

3. **Modalavalasa, S**., Chembolu, V., Dutta, S. and Kulkarni, V., 2022. A laboratory investigation on main channel flow structure and turbulent characteristics in low sinuous compound channel with flood-plain green corridor. (Under Review)

CONFERENCES

1. **Modalavalasa, S.;** Anjaneyulu, A.; Chembolu, V.; Kulkarni, V.; and Dutta, S. 2021 December. A study on flow characteristics with the interactions of green river corridor through experimental and numerical investigation. AGU fall meeting, New Orleans, LA & online. 13-17 December 2021. https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/942890
2. **Modalavalasa, S.,** Chembolu, V., Nandi, K.K., Kulkarni, V. and Dutta, S., 2021, April. "Effect of bridge pier induced turbulence on vegetated meander river morphology". In EGU General

Assembly 2021. vEGU21, Vienna, Austria & Online (19-30 April 2021). Conference Abstracts (pp.EGU21-1465). https://doi:10.5194/egusphere-egu21-1465

3. **Modalavalasa, S**.; Pradhan, C.; Siddharth, A.; Dutta, S. 2019. "National Symposium on Innovations in geospatial technology for sustainable development with special emphasis on NER". ISG-ISRS, 2019, Shillong, India.
4. **Modalavalasa, S;** Pradhan,.C; Kulkarni, V; Dutta, S. 2019. "Flow Structure in Meandering Channel with Vegetation". Conference Paper: 16th Annual Meeting, AOGS 2019, Singapore.
5. Siddharth, Amit; Pradhan, C; **Modalavalasa, S**; Dutta, S. 2019. "Effect of In-stream Variable on the Lower Mahanadi River, India". Conference Paper: 16th Annual Meeting, AOGS 2019, Singapore.

BOOK CHAPTER

1. Pradhan, C.; **Modalavalasa, S**.; Dutta, S.; Bharti, R. 2020. "A geomorphic approach to evaluate river recovery potential for regulated river basin". River Flow 2020: Proceedings of the 10th Conference on Fluvial Hydraulics (Delft, Netherlands, 7-10 July 2020). CRC Press. DOI: 10.1201/b22619-253

WORKED FOR CONSULTANCY PROJECTS

- Hydrological Studies for 400kV D/C T/L (Bongaigaon-Nangalbibra) in the State of Assam for Brahmaputra River Crossing. Project Team: Subashisa Dutta (PI), *Suresh Modalavalasa. Consultant: STERLITE POWER TRANSMISSION LTD. (Under progress)
- Study of river morphology in the Dudhnoi- Krishnai catchment to suggest sustainable protection measures for river bank erosion under the national hydrology project. Project Team: Subashisa Dutta (PI), *Suresh Modalavalasa. Consultant: State Government of Meghalaya in association with World Bank funding- under National Hydrology Project. (Under progress)
- Study and Improvement / Relaying of Existing Drainage and Water Supply System in 'AB' and 'D' type Colony. Project Team: Subashisa Dutta (PI), *Suresh Modalavalasa and Akkimi Anjaneyulu Consultant: ONGC, India (Completed).

AWARDS AND HONOURS

- **Best Presentation Award** at RCRM 2021, IIT Jammu, J & K, India 2021
- **Best Oral Presentation Award** at GITAM College of Engineering, Visakhapatnam, 2009.
- **Visweswarayya Memorial Merit Award** at Andhra University College of Engineering, Visakhapatnam, 2008.

WORKSHOP / SEMINAR/ WEBINAR

- *FLOW3D*, 2-day Water and Environment workshop, 25th -26th Sept. 2020 by Flow3D team, Pune India
- Ansys Fluent 2019, 2-day workshop by Dept., of Mechanical Engineering, IIT Guwahati.
- Flood Risk and River Basin Management, 2018 by Dept. of Civil Engineering, Indian Institute of Technology Guwahati

WORSHOPS ORGANIZING COMMITTEE COORDINATOR

- International workshop on "The Joy, Opportunities and Challenges in Field Hydrological Research", jointly organized by Departments of Civil Engineering, The National Institute of Engineering, Mysuru and Indian Institute of Technology Guwahati, India (2nd to 6th Nov. 2020)
- 13th International Conference on Vibration Problems (ICOVP-2017), hosted jointly, Indian Institute of Technology Guwahati, India and Işık University, İstanbul, Turkey. (29th Nov., - 2nd Dec. 2017)
- Indian Geotechnical Conference (IGC) 2017, organized by IGS Guwahati Chapter (NE) in association with Department of Civil Engineering, IIT Guwahati (14th – 16th Dec. 2017)

TEACHING ASSISTANSHIP

- Teaching Assistant, **CE:570, River Engineering** at IIT Guwahati, 2018 and 2019
- Teaching Assistant, **CE:553, Advanced Hydraulic Engineering** at IIT Guwahati, 2017
- Teaching Assistant, **ME:111, Engineering Drawing** at IIT Guwahati, 2018

STUDENT MENTORSHIP

- Om Prakash Maurya, "Numerical investigation on the free surface flow of open channel with Sand mining pit and Bridge pier using ***FLOW3D*** hydro CFD solver". 2022 (Post Graduate)
- Vikash Kumar, "Combined effect of Sand Mining Pit and Bridge pier on main channel turbulence- An Experimental study". 2021 (Post Graduate)
- Jabin Sultan, "Experimental study of the turbulence structures in a compound meandering channel with heterogeneous vegetation in a flood plain". 2019 (Post Graduate)
- Amit Siddharth, "Turbulence & Morphological characteristic of vegetated meander channels". 2018 (Post Graduate)
- Sarthak Saxena, "Modeling of Flow Characteristics in a Sinuous Open Channel with a Vegetated Floodplain". 2019 (Under Graduate)
- Puneet Yadav, "Effect of flood plain vegetation on flow structures of meandering channel".2018 (Under Graduate)

FIELD EXPEIENCE

- Ground reconnaissance and Echo sounder survey on Dudhnoi- Krishnai catchments, Meghalaya. National Hydrology Project. 31st Jan 2021 - 1st Feb 2022.
- Echo Sounder and ADCP Survey on Brahmaputra River at Jogighopa on the project titled Hydrological Studies for 400kV D/C T/L (Bongaigaon-Nangalbibra) in the State of Assam for Brahmaputra River Crossing. 27/11/2021.
- Echo sounder and Underwater robotic survey on Brahmaputra River for NERC project on 22/12/2021.
- Post Flood Survey of Flood Affected Districts of Assam. 2019
- The Puthimari River: ADCP survey, Reconnaissance survey, bed and bank material sample collection (2017-18)

LABORATORY EXPERIENCE

- Flume Experiments, Fluvial Hydro Ecological Laboratory, IIT Guwahati. (2018-2021)
- Fluid mechanic Laboratory Experiments, Water Resources Engineering Laboratory, IIT Guwahati. (2019-2021)
- Atomic absorption spectrometry (AAS), Centre for the Environment, IIT Guwahati (2017-2020)

SKILLS AND EXPERTISE

- FLOW3D, CFD Solver
- ANSYS FLUENT, CFD Solver
- Openfoam (learner stage)
- SOLIDWORKS 3D Designing tool,
- MATLAB, Python, AI & ML based algorithms
- ARC-GIS, GOOGLE EARTH ENGINE
- Operated lab equipment: **Acoustic Doppler velocimeter (ADV), Sediment feeder, Current Profiler, Echosounder (deeperpro+) and Acoustic Doppler Current Profiler (ADCP)**
- **Established the Fluvial Hydro-ecological laboratory (20x4m), at IIT Guwahati**

GRANTS AND FELLOWSHIP

- **Ministry of Human Resources and Development Fellowship** during Ph.D. (2016-2021)
- **State Government Fellowship** during Master's Degree (2014-2016)
- **State Government Fellowship** during Bachelor of Engineering (2006-2010)

PROFESSIONAL AFFILIATION

- Student Member of American Geophysical Union, Member ID 1284871 (2021)

- Student Member of European Geosciences Union, Member ID-589453 (2021)
- Student Member of Asia Oceania Geosciences Society, Membership ID- T03SS0141H (2019)

PROFESSIONAL EXPERIENCE

- Worked as a **Research Associate** at Indian Institute of Technology Jammu. Project titled as "Evaluating the Feasibility and Efficacy of Integrated Catchment Scale Nature-based solutions for Climate Change adaptation in India (ENACT)". A collaborative project with Loughborough University, London.
- Worked as an **Assistant Professor** at Sir C R Reddy College of Engineering for the period of June 2012 to December 2016.

EXTRA CURRICULAR ACTIVITIES

- A cadet of **National Cadet Corps (NCC)** under 13(A) AIRFORCE WING and 2nd ANDHRA ARMY REGIMENT and secured "A", "B" & "**C**" category certificates.
- Organized Environment Eco-friendly structure workshops, to bring awareness among the young budding engineers

I do hereby declare that the information and fact stated above are true and complete to the best of my knowledge

Date: 05/05/2022 **SURESH MODALAVALASA**

REFERENCES

Prof. Subashisa Dutta **(PhD. Supervisor)** Department of Civil Engineering Indian Institute of Technology (IIT) Guwahati, Assam, India - 781039 Mobile: +91 – 94351 04598 Email: subashisa@iitg.ac.in	**Prof. Vinayak Kulkarni** **(PhD. Co-Supervisor)** Department of Mechanical Engineering Indian Institute of Technology (IIT) Guwahati, Assam, India - 781039 Mobile: +91 – 86384 29238 Email: vinayak@iitg.ac.in
Prof. C.N.V Satyanarayana Reddy Head of the Department Department of Civil Engineering Andhra University college of Engineering, Visakhapatnam Visakhapatnam, India- 530003 Phone: 0891 2844775, 4774 Email: prof.cnvsreddy@andhrauniversity.edu.in	**Dr. Vinay Chembolu** Department of Civil Engineering Indian Institute of Technology (IIT) Jammu, J & K, India - Mobile: +91 – 9085857565 Email: chembolu.vinay@iitjammu.ac.in