WELCOME TO
HYDRAULICS AND WATER RESOURCE ENGINEERING (HWRE)

Dr. Balaji Narasimhan

Dr. B.S.Murty

Dr.Soumendra Nath Kuiry

Dr. K.P.Sudheer

Dr. Venkatraman Srinivasan

Dr. Venu Chandra

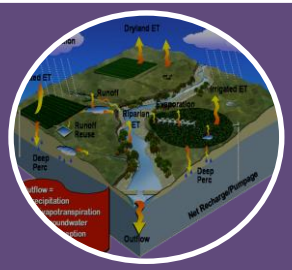
Dr. Subbarao Pichuka

Dr. Sreeparvathy Vijay

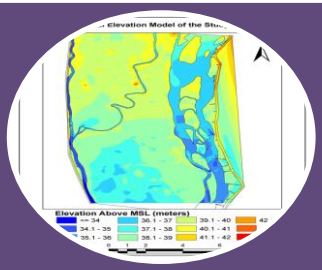
Dr. Balaji Narasimhan
Ph.D, Texas A&M University, USA
Professor, Dept. of Civil Engineering
044-2257-4293; nbalaji@iitm.ac.in
http://www.civil.iitm.ac.in/balaji_edu

- Remote Sensing and GIS
- Hydrological Modeling
- Irrigation water management

Crop Evapotranspiration, Inter-basin water transfer, Irrigation efficiency



Impact of climate and land use changes on the water resources



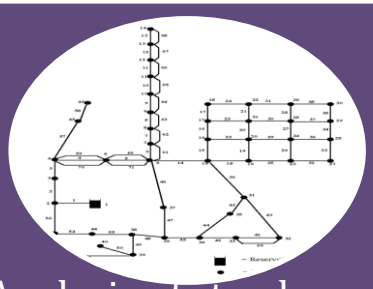
Floods & droughts extent, magnitude, duration and frequency

Hydrologic Modelling for effective management of land and water resources

Dr. B. S. Murty
Ph.D, Washington State Univ., Pullman, USA
Professor, Dept. of Civil Engineering
044-2257-4262; bsm@iitm.ac.in
http://www.civil.iitm.ac.in/murty_edu

- Open-Channel Flow Modeling
- Closed Conduit Flows
- Groundwater Resources Management

Modeling of flow and transport of pollutants in open channels for quantity and quality management



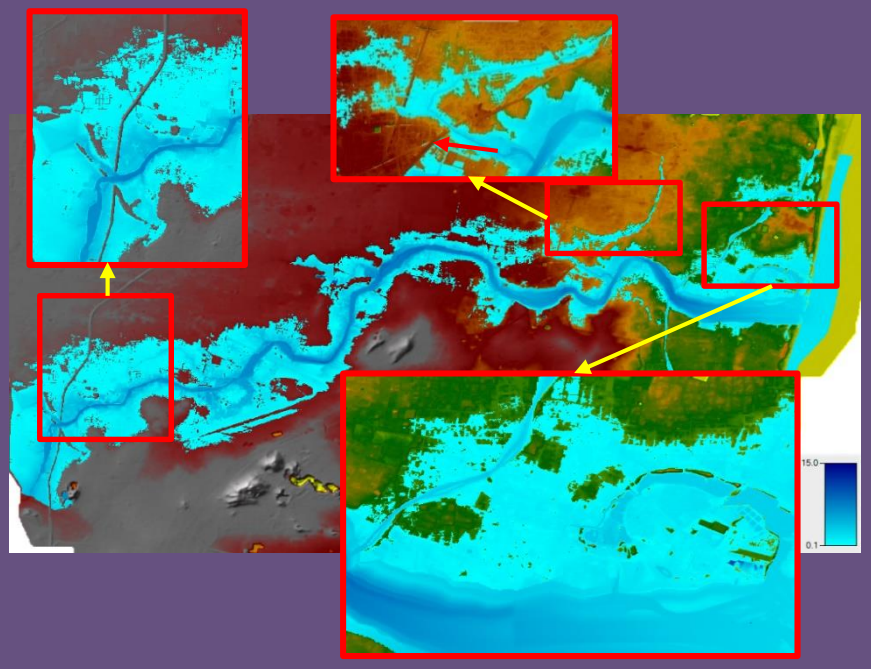
Analysis of steady and transient flows in pipe systems, optimal design, condition assessment

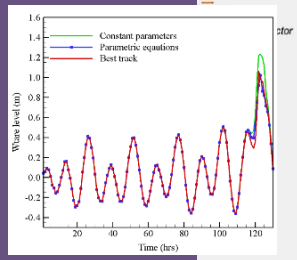
Simulation and management models for groundwater resources utilization and aquifer remediation

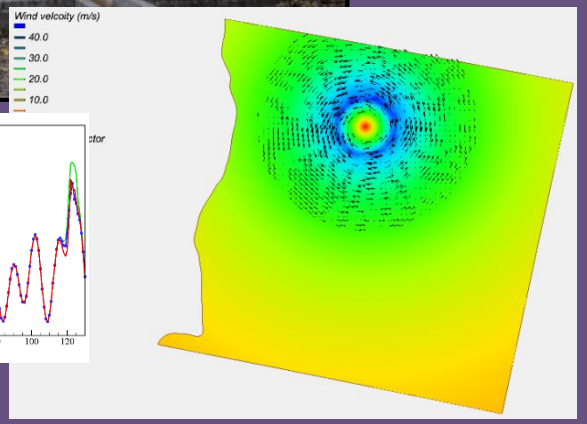
Computational Hydraulics for Management of Water Resources

Dr. Somendra Nath Kuiry
Ph.D., IIT Kharagpur
Assistant Professor, Dept. of Civil Engineering
044 -2257 4309; snkuiry@iitm.ac.in
http://www.civil.iitm.ac.in/kuiry_edu

- Computational Hydraulics – river, coastal and dam-break flow, urban flood, flash flood
- Experimental Hydraulics – flow and sediment transport in river-networks
- Ocean Dynamics - storm surge and tsunami wave propagation, interaction of river and ocean







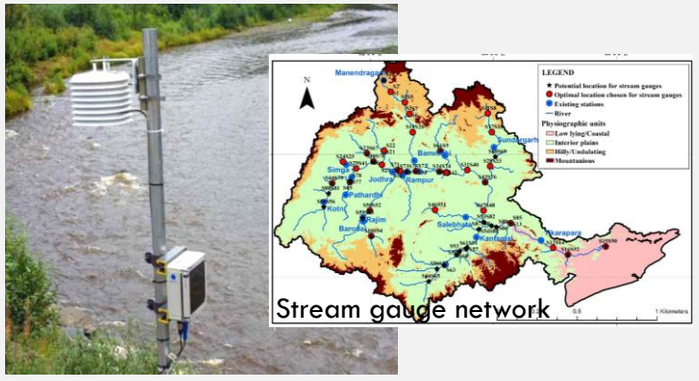
Dr. Sreeparvathy Vijay

Ph. D, Indian Institute of Science (IISc), Bangalore, India
Assistant Professor, Civil Engineering Department

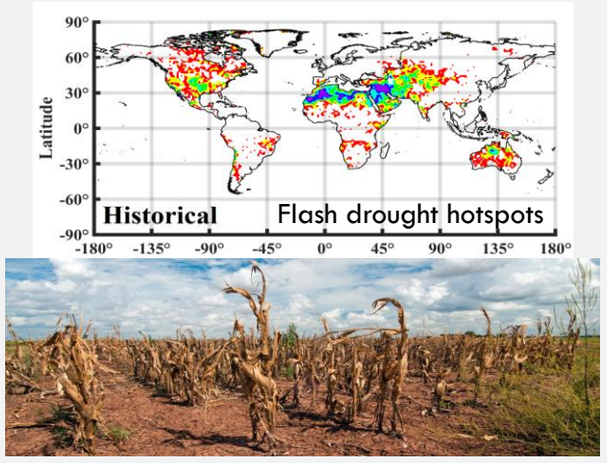
Phone: 044-2257 4250; Email: sreeparvathyvijay@iitm.ac.in
Website: https://civil.iitm.ac.in/faculty/sreeparvathyvijay/

Major Areas of Research

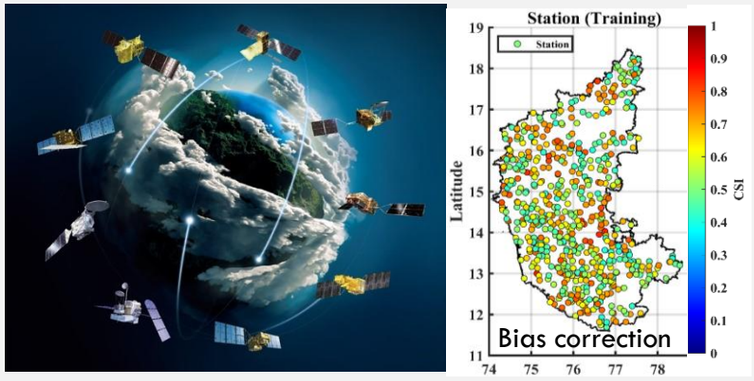
- Hydroclimatic extremes
- Design of hydrometeorological monitoring networks
- Climate change impact assessment
- Remote sensing for hydrological applications



Design of optimal hydrometeorological monitoring networks for integrated water resource planning and management



Assessment and mitigation of hydrological extremes for present and future climate change conditions



Development of bias corrected remote sensing data products using advanced machine learning techniques for hydrological applications

Assessment, predication and monitoring of hydrometeorological variables for changing climatic conditions

Dr. Subbarao Pichuka

PhD, IIT Kharagpur, India

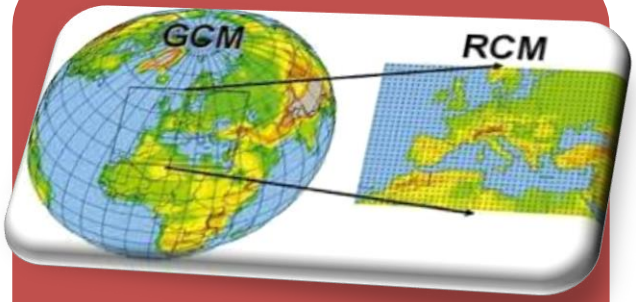
Assistant Professor, Civil Engineering

phone: 044-2257-4269; email: srp@iitm.ac.in

website: http://www.home.iitm.ac.in/subbarao

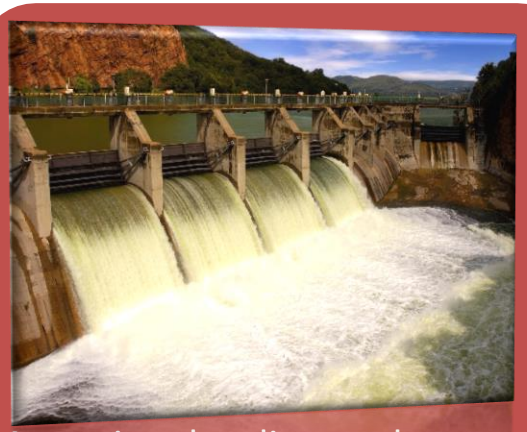
Major Areas of Research

- Climate Change impact on Hydrological Extremes
- Urban Hydrology
- Integrated Watershed Management, Dam Engineering



Downscaling techniques to bring the large scale information to local scale

Utilizing the downscaled data for watershed management and urban flooding studies

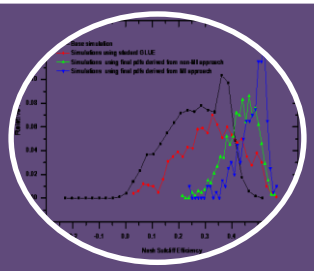


Assessing the climate change impacts on Dam Safety

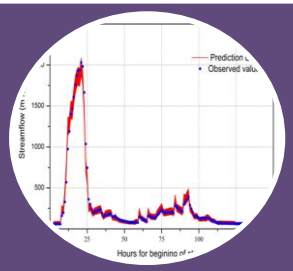
Assessing the variation of Hydrological parameters under different climate change Scenarios

Dr. K. P. Sudheer
Ph.D, IIT Delhi, India
Professor, Dept. of Civil Engineering
044-2257-4288; sudheer@iitm.ac.in
http://www.civil.iitm.ac.in/sudheer_edu

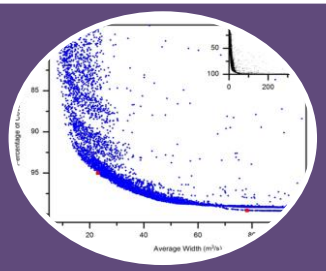
- Hydrologic Modeling
- Predictions in Ungauged Basins (PUB)
- Uncertainty and Sensitivity Analysis



Distributed Hydrological Models for PUB



Hydrologic Prediction Band



Construction of Prediction band

Employing Distributed Hydrological Models for Water Resources Assessment

Dr. Venkatraman Srinivasan

PhD, University of Illinois Urbana Champaign, USA

Assistant Professor, Civil Engineering

phone: 044-2257-4321; email: venkatraman@iitm.ac.in

website: http://www.home.iitm.ac.in/venkatraman

Major Areas of Research

- Process based eco-hydrological models of vegetated land surfaces
- Climate change impact on food and water security
- Experimental manipulation of crop micro climate environment

Develop an experimental greenhouse facility to study plant behavior under various microclimatic conditions

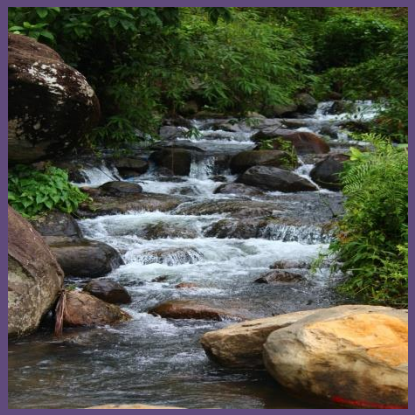
Develop a high resolution 3D explicit architecture plant canopy and root system ecohydrological model

Predict impact of climate change on future food and water security and suggest mitigation measures

Predict the response of vegetation under abiotic stresses and climate change

Dr. Venu Chandra
Ph.D., IIT Kanpur
Associate Professor, Dept. of Civil Engineering
044 -2257 4281; vc@iitm.ac.in

- Experimental Hydraulics
- Sediment Transport
- Cohesive Sediment Dynamics
- River Training and Scour Protection Works



Step pool hydrodynamics in mountain streams

Annular flume (Cohesive sediment studies)

Field application

Laboratory to field to prevent sedimentation at hydraulic structures

Typical Courses & Electives

Hydraulic & Water Resources Engineering

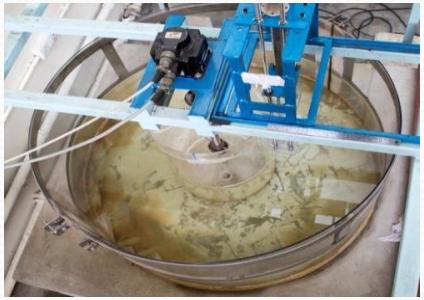
Applied Hydraulic Engineering
Groundwater Engineering
Surface water hydrology
Water Resources Planning & Management
Rive Engineering

Simulation Modeling in Water Resources
Contaminant transport Modeling
Pipeline Engineering
Geographic Information System
Remote Sensing of the Environment
Urban Hydrology and Storm Drainage design

Hydraulic Engineering Laboratory
Hydroinformatics Laboratory

Hydraulic & Water Resources Engineering Lab

Experimental Research Facilities at the Hydraulic Laboratory



Annular flume

Experimental flume with steep slope

River confluence model with mobile bed

New hydraulics laboratory with experimental flumes