



**23<sup>rd</sup> CONGRESS OF THE INTERNATIONAL ASSOCIATION FOR  
HYDRO ENVIRONMENTAL ENGINEERING AND RESEARCH  
ASIA PACIFIC DIVISION**



**PRE-CONFERENCE PROGRAMME**

**DAY 0**

**Tuesday 13<sup>th</sup> December 2022**

<b>Time</b>	<b>Events</b>	<b>Venue</b>
09:00-09:30	Registration	On Site Registration
09:30-17:00	Workshop on Sustainable Urban Drainage System	<b>IGCS Seminar Hall</b> , 4 <sup>th</sup> Floor, Bioscience Building Block 2
09:30-17:00	Workshop on Textile Technology and its application on climate change adaptation	<b>DOE Seminar Hall</b> , 2 <sup>nd</sup> Floor Department of Ocean Engineering
<b>LUNCH BREAK (12:50 to 13:50, Terrace @ IITM)</b>		
17:00-19:00	Conference Registration	IC&SR Building, IIT Madras
<b>DINNER (19:00 TO 21:00)</b>		



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## TECHNICAL PROGRAMME

**DAY 1**

**Wednesday 14<sup>th</sup> December 2022**

<b>07:30-08:45</b>	<b>Registration</b>	<b>Venue:</b> <b>IC&amp;SR Building, IIT MADRAS</b>
<b>08:45-09:45</b>	<b>INAUGURATION</b>	<b>AUDITORIUM</b>

### Plenary Session 1 (10:00 - 10:50)

<b>Plenary Session 1</b> <b>Chair: Prof. Sundar V.</b>		<b>Venue: AUDITORIUM</b> <b>14 Dec. 2022 10:00-10:50</b>
<b>10:00-10:10</b>	About the IAHR Book: History of Water, <b>Dr Hyoseop Woo</b>	
<b>10:10-10:20</b>	National Technological Centre for Ports, Waterways and Coasts, <b>Prof. K. Murali</b>	
<b>10:20-10:50</b>	<b>Keynote 1</b> Hybrid Defence System for Inundating Tsunami Current or Overbank Flow from a River - <b>Prof. Norio Tanaka, Saitama University, Japan</b>	

### TEA BREAK (10:50 – 11:20)

### Parallel Sessions 1 to 4 (11:20 - 12:50)

<b>Parallel Session 1: River Hydraulics</b> <b>Chair: TBC</b>		<b>Venue: AUDITORIUM</b> <b>14 Dec. 2022 11:20-12:50</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>
<b>11:20</b>	<b>ID047</b>	Total Load Transport model for Sand Bed Rivers <b>Urvashi Malani</b> , Sahita I. Waikhom and Sanjay m. Yadav
<b>11:35</b>	<b>ID078</b>	Maintenance of the Fairway at River Confluence Using Spur Dike <b>V Raam Balaji</b> , Malasani Gopichand, K Murali and Venu Chandra
<b>11:50</b>	<b>ID081</b>	Prediction of Scour Depth Around Bridge Piers Using Artificial Neural Networks <b>Siva Krishna Reddy</b> and Venu Chandra
<b>12:05</b>	<b>ID139</b>	Numerical Simulation of Scour Around Tandem Piers Using Flow 3D. Hansraj Uke, Rutuja M Chavan
<b>12:20</b>	<b>ID140</b>	Modelling Morphological Processes in The Vicinity of River Mouth Due to Partial Closure of The River Mouth Avula Arun Kumar, <b>Mutukuru Gangireddy Muni Reddy</b> , P.V.L Narasingarao

<b>Parallel Session 2: Computational Hydraulics</b> <b>Chair: TBC</b>		<b>Venue: HALL 1</b> <b>14 Dec. 2022 11:20-12:50</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>
<b>11:20</b>	<b>ID082</b>	Numerical Simulation of Hydrodynamics and Morphodynamics in Thane Creek, India <b>Mahadevan Aparna</b> , Nandhakumar Saichenthur and Kantharaj Murali
<b>11:35</b>	<b>ID110</b>	Comparison of Physical and Numerical Analysis to Study Effect of Discharge and Water Depth on Spillway Downstream Water Quality <b>Sushma Vyas</b> and Y. N. Srivastava
<b>11:50</b>	<b>ID065</b>	Simulation of Bore Using Conservative Shallow Water Equations and ENO and WENO Schemes <b>Srimathy K</b> and K Murali



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12:05	ID096	A Mesh-Free Non-Newtonian Approach for Modelling of Embankment Failure Naveed U, I Hassan Bhat, <b>Gourabananda Pahar</b> and Anirban Dhar
12:20	ID113	Numerical Investigations into Wave Attenuation Characteristics of Vegetation Belt in Terms of Vortex Shedding Due to Different Arrangement Configuration <b>N Hari Ram</b> , Shaswat Saincher, V Sriram
12:35	ID158	Experimental Study on Liquid Sloshing Dynamics in A Sway Excited Rectangular Tank Sahaj K.V, Shwetha Shri and T. Nasar

Parallel Session 3: Climate Change Chair: TBC			Venue: HALL 2 14 Dec. 2022 11:20-12:50
Time	Paper ID	Paper Title and Author(s)	
11:20	ID157	Anticipated Effects of Climate Change in New Zealand <b>Guinevere Nalder</b>	
11:35	ID075	Climate Change and Crop Yield: Predictions based on Machine Learning <b>Arunya KG</b> , Krishnaveni M	
11:50	ID129	Do CMIP6 GCMs outperform CORDEX RCMs in simulating near-surface wind speed climate over the Indian ocean? <b>Naresh Kumar Goud Lakku</b> , Manasa Ranjan Behera	
12:05	ID141	Climate adaptation along the German coast of the Baltic Sea <b>Dirk Fleischer</b> , Arne Arns, Jürgen Stamm.	
12:20	ID060	Long-Term Impacts of Climate Change on Reinforced Concrete Berthing Structures. <b>Santosh Kumar B</b> , S A Sannasiraj, K Murali	
12:35	ID067	Combined Storm Surge and River Flow Simulation for The Hooghly Estuary, East Coast of India. B.Sridharan, Vikram Pratap Singh, Dhrubajyoti Sen, Soumendra Nath Kuiry	

Parallel Session 4: Maritime Hydraulics Chair: TBC			Venue: HALL 3 14 Dec. 2022 11:20-12:50
Time	Paper ID	Paper Title and Author(s)	
11:20	ID091	Hydrodynamic Investigation on Wind Effects on Wave Overtopping at Vertical Seawalls <b>Swapnadip De Chowdhury</b> , Jian Guo Zhou, Tim Pullen	
11:35	ID061	Application of IITM-RANS3D to Wave-Breaking and Wave-Structure Interaction Problems <b>Shaswat Saincher</b> , V Sriram	
11:50	ID146	Wave Transmission Characteristics of Slotted Vertical Wave Barriers in Random Waves <b>Subramaniam Neelamani</b> , Alanoud Al-Ragum	
12:05	ID155	Numerical Investigation of Effect of Twin Island Structure and Its Impact on Burble <b>Ankit Nehra</b> , Vijayakumar R	
12:20	ID093	Numerical Investigation of Resonant Water Motion Between a Rectangular Barge and a Vertical Wall Using the IMPLG_R Method <b>Vineesh P</b> , V Sriram	

**LUNCH (12:50-13:50)**



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## Parallel Sessions 5 to 8 (13:50-15:20)

Parallel Session 5: Surface Water Resources			Venue: AUDITORIUM	
Chair: TBC			14 Dec. 2022 13:50-15:20	
Time	Paper ID	Paper Title and Author(s)		
13:50	ID019	Dibhang River Training Studies at Arunachal Pradesh, India <b>P K Suresh</b> , Sundaravadivelu Ranganathan and Nilanjan Saha		
14:05	ID015	Geospatial Assessment of Pallikaralai Marsh in Tamil Nadu (India) - A step towards urban flood resilience <b>Reshma R</b> , Soumendra Nath Kuiry		
14:20	ID053	Ensemble Techniques for Correlating Stream Gauging stations <b>Shreenivas Londhe</b> , Preeti Kulkarni and Pradnya Dixit		
14:35	ID135	Modelling on Monthly Streamflow Based on Two Different DEM Resolutions of Basins <b>I Gede Tunas</b> , Sukandi Samatan		
14:50	ID143	Effect Of Changes in Environmental Flow Caused by Natural and Anthropogenic Changes on The Habitat of River Ecosystems. <b>Joo-Heon Lee</b> , Seo-Yeon Park, Young-Jun Kim, Jong-Moon Na		

Parallel Session 6: Environmental Management			Venue: HALL 1	
Chair: TBC			14 Dec. 2022 13:50-15:20	
Time	Paper ID	Paper Title and Author(s)		
13:50	ID055	Livelihood River Quality Naturally <b>Eny Suria Binti A Jalil</b> , Nik Kun Bin Nik Man and Shanker Kumar Sinnakaudan		
14:05	ID026	Eliminating Fixation of Alternate Bars by Using Impermeable Groynes Ryotaro Endo, Takao Tamura and Yasunori Muto		
14:20	ID037	Assessment Of the Status of The Hikkaduwa Marine Sanctuary D. P. C. Laknath, <b>T.U.S. Manamperi</b> , H.P.G.M. Caldera and K.K.P.P. Ranaweera		
14:35	ID014	Dissolution And Precipitation Effect on Salinity Ingestion During Flowthrough Biotic and Abiotic Porous Media Bihung Narzary, Soumen Maji and Medalsen Ronghang		
14:50	ID149	Performance Evaluation of surface wind speed estimates of observations of the West coast of India with Era-interim, IMDAA, NCEP-FNL, and Scatsat-1 <b>Pabali Mukherjee</b>		

Parallel Session 7: Maritime Hydraulics			Venue: HALL 2	
Chair: TBC			14 Dec. 2022 13:50-15:20	
Time	Paper ID	Paper Title and Author(s)		
13:50	ID023	Stability Analysis of Breakwater In Andhra Pradesh Through Numerical Modelling Sundaravadivelu Ranganathan, Sakthivel Sundaravadivelu and <b>Kavitha P</b>		
14:05	ID006	Numerical Modelling of Wave Impact on Floating Bodies <b>Arya Thomas</b> , V K Srineesh and Manasa Ranjan Behera		
14:20	ID033	Design of Breakwater with Permissible Overtopping Discharge Through Wave Flume Studies for The Development of Port <b>A V Mahalingaiah</b> , Uday B. Patil and Ganesh N. S.		
14:35	ID147	Wave Force on a Partially Immersed Caisson Supported on Piles <b>Vasanthakumar S</b> , Sannasiraj S.A, Sundar V, Karthik Ramanarayan S		
14:50	ID064	Numerical Analysis of Modular Floating Solar Farms Under Wave Motion. Dharma Sree K K, Adrian Wing-Keung Law, Dawn Sok Cheng Pang, Tan Sze Tiong, Wang Chien Looi, Jernice Kew Huiling, Seow Wei Kiong, Vincent Lim Han		



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15:05	ID160	Hexagon Tetrapod for Seawall at Muckachery <b>Chandramohan P V</b>
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Parallel Session 8: Surface and Ground Water Resources			Venue: HALL 3
Chair: TBC			14 Dec. 2022 13:50-15:20
Time	Paper ID	Paper Title and Author(s)	
13:50	ID156	Performance Of Acoustic Doppler VECTRINO Profiler in Measurement of Velocity Profile in Mobile Bed Channel. <b>Gurugubelli Yatirajulu</b> , Laxman Rathod, P V Timbadiya, Bandita Barman	
14:05	ID052	Experimental Study of Turbulent Flow Characteristics Around a Circular Bridge Pier <b>Siva Krishna Reddy</b> , Venu Chandra	
14:20	ID048	Understanding the Driftage Behaviour of Multiple Debris Due to Tsunami Induced Flows on a Sloped Bed <b>N. R. Josiah</b> , S. Araki, D. P. C. Laknath	
14:35	ID133	Simulation-Optimization Based Inverse Groundwater Modelling to Estimate Aquifer Parameters <b>K. Swetha</b> , T.I. Eldho, L. Guneshwor Singh, A. Vinod Kumar	
14:50	ID107	Estimation of Surface Soil Moisture of The Brahmaputra Basin in Bangladesh Using SAR Remote Sensing <b>Ahmed Hossain</b> , Shampa	

### TEA BREAK (15:20 – 15:50)

### Plenary Session 2 (15:50 – 16:50)

Plenary Session 2		Venue: AUDITORIUM
Chair: Prof Radiant Triatmadja		14 Dec. 2022 15:50-16:50
15:50-16:20	<b>Keynote 2</b> Experiences and observations from the Flood Disaster 2021 in Germany, <b>Dr.-Ing. Holger Schüttrumpf</b> , RWTH Aachen University, Germany	
16:20-16:50	<b>Keynote 3</b> Ocean Waves as a Link Between Met Ocean Time Scales: Turbulence, Waves, Weather, Climate; and Between Environments: Deep Water, Coasts, Marginal Ice Zone, <b>Prof. Alexander V Babanin</b> , University of Melbourne, Australia.	

### Special Session 1 and Parallel 9 to 10 (16:50-18:20)

Special Session 1: Coastal Engineering	Venue: AUDITORIUM
Moderator: Prof. Sannasiraj S A & Dr. Sriram V	14 Dec. 2022 16:50-18:20
Invited Lectures	
Dr. Balaji, Professor, IIT – Bombay	
Mr. P. N. Ananth, Vice President and Head of Energy and Marine Department, COWI India (P) Ltd.	
Dr. P.V. Chandramohan, President: Technical, Navayuga Engg. Co. Ltd.	
Dr. Sundaravadivelu, Professor Emeritus, IIT- Madras	
Dr. K G S Sharma, General manager, RITES Ltd.	
Dr. Kumaran Raju, Principal Scientist, National Technology Centre for Ports Waterways and Coasts	
Mrs. Suganya, Senior Engineer, National Technology Centre for Ports Waterways and Coasts	



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<b>Parallel Session 9: Statistical Methods</b>			<b>Venue: HALL 2</b>
<b>Chair: TBC</b>			<b>14 Dec. 2022 16:50-18:20</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>	
16:50	ID150	Case Study Using Artificial Intelligence and Machine Learning Methods to Predict Unknown Water Level in North Korean Dams <b>Joo bum. Park</b> , Seung Hee. Lee, Sun Iin. Kim	
17:05	ID130	Estimation of Probable Maximum Tropical Cyclone Parameters for Bay of Bengal and Arabian Sea. <b>Satish Kumar</b> , Manasa Ranjan Behera, Saikrishna Nadella, Vinod Kumar A	
17:20	ID100	Application Of ANFIS and Linear Regressions into Prediction of Reservoir Outflow. <b>Biswajit Nayak</b> , Janhabhi Meher, Minakshee Mahananda	
17:35	ID145	A Data Driven Artificial Viscosity Method for Shock Capturing Rahul Saroj Gupta, Prabhakar Akurati, Ritwik Ghoshal	

<b>Parallel Session 10: Turbulence Modelling</b>			<b>Venue: HALL 3</b>
<b>Chair: TBC</b>			<b>14 Dec. 2022 16:50-18:20</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>	
16:50	ID039	Effect of Entrained Air Bubbles on Shock Waves and Cavitation Erosion Dingkang Xia, Jianhuawu, <b>Kunpeng Su</b> and Liu Yang	
17:05	ID001	Numerical simulation of submerged hydraulic jump using a URANS model <b>Seongwook Choi</b> and Sung-Uk Choi	
17:20	ID045	Turbulence anisotropy and length scales around a straight spur dike <b>Tapas Kumar Pradhan</b> and Venu Chandra	
17:35	ID051	Simulation study for Spatial Variation of Turbulence Characteristics Around Circular Bridge Pier USING STANDARD K-ε turbulence model <b>Praveen Rathod</b> and V.L.Manekarb	
17:50	ID162	Numerical Modelling of Ship Waves and Induced Sediment Resuspension In The Hooghly River, India <b>Mainak Chakraborty</b> , V Sriram, K Murali .	

**ICE BREAKER (19:00 – 20:30)**



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**DAY 2**

**Thursday 15<sup>th</sup> December 2022**

**Parallel Sessions 11 to 14 (09:00-10:30)**

<b>Parallel Session 11: Surface Water</b>			<b>Venue: AUDITORIUM</b>
<b>Chair: TBC</b>			<b>15 Dec. 2022 09:00-10:30</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>	
09:00	ID018	Estimation of Braided River Bathymetry in Poorly Gauged Rivers Using Optical Images for Estimation of River Erosion <b>Mohammad Muddassir Islam</b> , Israt Jahan Nejhum, Md Manjurul Hussain and Shampa	
09:15	ID138	In-Stream and Floodplain Sand Mining Impacts in An Alluvial River – A Case Study of Thoubal River, Manipur, India <b>Mukesh Kumar Yadav</b> , Ngangbam Romeji and Chesabam Sonali	
09:30	ID041	Evaluation Of Predictive Skill of Short-Term Raw Ensemble Forecasts for Mapping of Extreme Floods <b>Nithila Devi. N</b> , Soumendra Nath Kuiry	
09:45	ID097	On Applicability of Local Inertia Model for Integrated Surface-Subsurface Flow Systems. <b>Alok Kumar</b> , Gourabananda Pahar	
10:00	ID098	Depth-Averaged Modelling of the Free Surface Flows Subjected to Sharp Obstructions <b>Naveed Ul Hassan Bhat</b> , Gourabananda Pahar	

<b>Parallel Session 12: Maritime Hydraulics Modelling</b>			<b>Venue: HALL 1</b>
<b>Chair: TBC</b>			<b>15 Dec. 2022 09:00-10:30</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>	
09:00	ID063	Simulation of Wave Climate and Wave Energy in South-Western Coast of Sri Lanka D. P. C. Laknath, <b>I G I K Kumara</b> , H.P.G.M. Caldera, K.K.P.P. Ranaweera	
09:15	ID092	A Meshless Numerical Method for Solving the Two-Dimensional Shallow Water Equations <b>D Satyaprasad</b> , S. Sundar, Soumendra Nath Kuiry	
09:30	ID086	Mesh Transformation Effects in Three-Dimensional Hydrodynamic Modelling of The Gulf of Kachchh <b>Thankachan Susmitha</b> , Kanakkassery Raju Sidharth, Nandhakumar Saichenthur, Kantharaj Murali	
09:45	ID088	Analysis of trends in the significant wave height over the Northern Indian Ocean <b>Dhanya Mol P</b> , Agilan V., Anand K V.	
10:00	ID123	Effect Of Bottom Friction and Wind Drag Coefficient on Tropical Cyclone Storm Surge Hindcast in The Bay of Bengal <b>V G Shashank</b> , V. Sriram, Holger Schüttrumpf, S. A. Sannasiraj	
10:15	ID007	Shoreline Restoration North of Pondichery Port by Artificial Nourishment Between Submerged Reef and North Breakwater Sundaravadivelu Ranganathan, Sakthivel Sundaravadivelu, Palluvar K.Suresh and <b>Kreesa Kumaran.S</b>	





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<b>Parallel Session 13: Environmental Management</b>			<b>Venue: HALL 2</b>
<b>Chair: TBC</b>			<b>15 Dec. 2022 09:00-10:30</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>	
09:00	ID108	A Study of Groundwater Contamination and Its Probable Protective Measures from Medical Waste in Kokrajhar, Assam, North East India Pwjpgwngsar Basumatary, Soumen Maji, Yachang Omo	
09:15	ID016	The Study on The Hydraulic Control Concept of The Yodo River Basin That Utilizes a Part of The Reclaimed Land of The Ogura-Ike Pond as a Retarding Basin <b>Yuko Ishida</b> and Yoshiya Ogawa	
09:30	ID004	Investigation on the Performance of Attached Growth Biological System for Instream Treatment of Municipal Wastewater <b>Mohammed Iqbal Thayyil</b> and Ligy Philip	
09:45	ID114	Political Connectivity, Social Capital and Multidimensional Coastal Vulnerability Index in India <b>Benisha G</b> , Sabuj kumar Mandal, Unmesh Patnaik	
10:00	ID163	Fluid Ecologies, Sovereignty and Colonialism: Princely Contestations for Riverine Islands in Colonial India S. Mahendranath, John Bosco Lourdusamy	

<b>Parallel Session 14: Coastal Hydraulics</b>			<b>Venue: HALL 3</b>
<b>Chair: TBC</b>			<b>15 Dec. 2022 09:00-10:30</b>
<b>Time</b>	<b>Paper ID</b>	<b>Paper Title and Author(s)</b>	
09:00	ID134	Performance Evaluation of Iyzenga over Stumpf's Model on Satellite Derived Bathymetry. Jasmin Bar, M. Selva Balan	
09:15	ID009	Founding Level and Fixity Depth of Pile in Layer Soil with Weathered Rock and Basalt Rock. Sakthivel Sundaravadivelu, Sundaravadivelu Ranganathan, Kavitha Perumalsamy, <b>Sowmiya S</b>	
09:30	ID008	Scouring of Sandy Bed Around Curved Seawalls Due to Extreme Wave Events. <b>Daineymol Thomas</b> and K V Anand	
09:45	ID002	Numerical Simulation of Driftwood Generation Modelling with Tsunami Flow Using 2d Flood Model and Driftwood Dynamics Model. Kang Taeun, Chang-Lae Jang	
10:00	ID043	Experimental Investigation of Tsunami Bore Momentum Reduction Using Vegetation <b>Harish S</b> , B. Jochems, Jan Oetjen, Holger Schüttrumpf, V. Sriram, S.A. Sannasiraj	

**TECHNICAL TOUR (10:30-19:00)**

**CULTURAL PROGRAMME (19:00-19:45)**

**BANQUET (19:45-21:45)**





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**DAY 3**

**Friday 16<sup>th</sup> December 2022**

## Parallel Sessions 15 to 18 (09:00-10:30)

Parallel Session 15: Water Quality			Venue: AUDITORIUM	
Chair: TBC			16 Dec. 2022 09:00-10:30	
Time	Paper ID	Paper Title and Author(s)		
09:00	ID094	Seasonal And Spatial Variation of Water Quality Parameters of Mula Mutha River, Pune, India. <b>Jitesh Narottam Vyas</b> , R. B. Deogade, Supriya Nath and Dudekula Nikhil Kumar		
09:15	ID011	Groundwater Quality Near the Nonai River in Udalguri District, Assam. <b>Medalsen Ronghang</b> , Partha Jyoti Sarmah, Irfan Kamal, Soruj Das, Jintu Moni Kalita and Zico Zemin		
09:30	ID125	Study of Groundwater Quality and Its Sustainability Using GIS Techniques in Kokrajhar, Assam, North East India. <b>Swdwmsri Brahma</b> and Yachang Omo		
09:45	ID137	Ecohydrological Response of Maklang–Tuyungbi–Taret Lok Biodiversity Hotspot River Catchment, Manipur, India. Victoria Ningthoujam, Ngangbam Romeji, Gunadas Singh Keisam, Jayalaxmi Ngasepam and Khuraijam Susilchandra		
10:00	ID154	Risk Assessment and Fish Habitat with The Stage of River Improvement. <b>Yoshiaki Seki</b> , Kohji Tanaka		

Parallel Session 16: Maritime Hydraulics			Venue: HALL 1	
Chair: TBC			16 Dec. 2022 09:00-10:30	
Time	Paper ID	Paper Title and Author(s)		
09:00	ID042	Influence of Cross Currents on Inland Vessel Movement - A Review <b>Malasani Gopichand</b> , Murali K And Venu Chandra		
09:15	ID136	Dredging Practice in Indian Ports an Overview <b>Hradaya Prakash</b> , N G Gogate, L R Ranganath		
09:30	ID151	Estimation of Maintenance Dredging Quantity Using Numerical Modelling Technique in Thane Creek Mandar Bharat Gavali, Balaji Ramakrishnan		
09:45	ID115	Modelling the Effects of Cyclones on Sediment Transport and Morphodynamics in Bay of Bengal Region <b>Rohini S</b> , Sannasiraj S.A., Sundar V., Dhananjayan M.		
10:00	ID159	Numerical Investigations on Different Shapes of Offshore Fish Cages Subjected to Regular Waves <b>Shaik Abdul Shareef</b> , Nasar Thuvanismail, Pawan Kumar, Eslavanth Sai Kiran Naik		
10:15	ID103	Progressive Damage Behaviour of Jacket Structure in A Ship Collision Ingle Utkarsha B., Anil Kumar Dash		

Parallel Session 17: Surface Water Resources			Venue: HALL 2	
Chair: TBC			16 Dec. 2022 09:00-10:30	
Time	Paper ID	Paper Title and Author(s)		
09:00	ID148	A Review of Various Modelling Techniques Used for Flood Prediction, Susceptibility Analysis and Mapping in Mountainous Regions. <b>Abhimanyu Singh Pathania</b> , Mahesh Patel, Jagriti Mishra		
09:15	ID119	Disposal of Stormwater Flows Generated by Climate Change Induced Heavy Rainfall Events. <b>Induka Werellagama</b> , Gregory De Costa, Ajith Kularathna		



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09:30	ID161	The Early-Warning System to Predict Sediment Flux in the Mountain Basin during Typhoon Events Hao-Che Ho.
09:45	ID066	River discharge control on tidal dynamics in Narmada estuary <b>P Vengadesan</b> , S A Sannasiraj, S Murty Bhallamudi

Parallel Session 18: Water Distribution & Sensor Network			Venue: HALL 3
Chair: TBC			16 Dec. 2022 09:00-10:30
Time	Paper ID	Paper Title and Author(s)	
09:00	ID030	A Study of Clean Water Supply After Earthquake at Lombok Utara Regency, Indonesia. Ari Ramadhan Hidayat, Djoko Legono, <b>Intan Supraba</b> and Radianta Triatmadja	
09:15	ID035	Application Of Substitution Theorem for Reorganization of a Water Distribution Network. <b>Raman Balireddy</b> , Anjan Chakravorty, S. Murty Bhallamudi and Soumendranath Kuiry	
09:30	ID036	A Quick Method to Determine Tank Capacity in the Pipe Network Due to Daily Fluctuation of Domestic Water Demand. <b>Radianta Triatmadja</b> , Djoko Legono and Intan Supraba	
09:45	ID102	Comparing The Energy Consumption Routing Protocols and Cooperative Communication Technique in Underwater Acoustic Sensor Networks – A Review. A.Kannappan and R.M.Bommi	

### TEA BREAK (10:30 – 11:00)

### Plenary Session 3 (11:00 - 13:00)

Plenary Session 3		Venue: AUDITORIUM
Chair:		16 Dec. 2022 11:00-13:00
11:00-11:30	<b>Keynote 4</b> UAV-based Remote Sensing of Water Quality in Coastal Environment for Engineering Applications– <b>Prof. Adrian Wing-Keung Law, NTU, Singapore</b>	
11:30-12:00	<b>Keynote 5</b> Urban Floods in India: An Emerging Hydrologic Challenge, <b>Prof. Mujumdar P. P., IISc Bangalore, India</b>	
12:00-12:30	<b>Keynote 6</b> The need for and characterization of fully developed flow in open channels. <b>Prof. Ram Balachandar, University of Windsor, Canada</b>	
12:30-13:00	<b>Keynote 7</b> Applications of Systems Analysis Techniques to Resolve Inter-State Water Sharing Disputes, <b>Prof. Jain S.K., IIT Roorkee, India</b>	

### LUNCH (13:00 – 13:50)



# 23<sup>rd</sup> CONGRESS OF THE INTERNATIONAL ASSOCIATION FOR HYDRO ENVIRONMENTAL ENGINEERING AND RESEARCH ASIA PACIFIC DIVISION



## Special Session 2 and Parallel Sessions 19 to 20 (13:50-15:20)

Special Session 2: Water Security and Climate Adaptation			Venue: AUDITORIUM
Chair: TBC			16 Dec. 2022 13:50-15:20
Time	Paper ID	Paper Title and Author(s)	
13:50	-	<b>Invited Lecture:</b> <b>Prof. Mukand Singh Babel</b>	
14:05	ID068	Assessment of Water Quality in Indravati Subbasin using ARCSWAT <b>Yuvaraja P</b> , Manjula R., Venkateswarlu Ch.	
14:20	ID005	A Qualitative Assessment for Water Management of Water Management for A Small River Basin Minh Ngoc Trinh	
14:35	ID128	Tropical Cyclone Activity Under Climate Change Over North Indian Ocean <b>Raviraditya Singh</b> and Manasa Ranjan Behera	
14:50	ID083	Flood Risk Assessment in The Yamato River System Under Climate Change Using Large-Scale Ensemble Data. <b>Daiki Omori</b> , Kohji Tanaka and Akira Kurihara	
15:05	ID126	Assessment Of Coastal Vulnerability Considering Future Extreme Events <b>Ashiq Ahmed M</b> , Nilanjan Saha, Sannasiraj S A.	

Parallel Session 19: Surface & Ground Water Resources			Venue: HALL 2
Chair: TBC			16 Dec. 2022 13:50-15:20
Time	Paper ID	Paper Title and Author(s)	
13:50	ID058	Comparative Evaluation of Monthly Rainfall Estimates Using Gene Expression Programming and Multiple Linear Regression Azazkhan i. Pathan, and <b>Saif Said</b>	
14:05	ID013	Urban Flood Modelling and Analysis of Recent Floods of Hyderabad 2020 Using PCSWMM: A Case Study <b>Aadhi Naresh</b> , M. Gopal naik, and S. Harish	
14:20	ID027	A Critical Review on Flow Over Fluvial Bed-Forms and Research Directions Mahesh Patel, Ajaz Ahmad mir and Bimlesh Kumar	
14:35	ID070	By-Pass Tunnel- A lifeline for Run-Of-River Hydro Projects M. K. Verma, <b>M Z Qamar</b> , A P Meshram and DR Neena Isaac	
14:50	ID022	Simplified Process Model Representation of Low Impact Development Techniques for Watershed Scale Analysis <b>Sreethu S</b> , Balaji Narasimhan and S. Murty Bhallamudi	

Parallel Session 20: Maritime Hydraulics			Venue: HALL 3
Chair: TBC			16 Dec. 2022 13:50-15:20
Time	Paper ID	Paper Title and Author(s)	
13:50	ID040	Estimation of Shoreline changes along Kozhikode coast using High-Resolution Remote Sensing <b>Saikrishnan K.</b> , K.V. Anand and Agilan V.	
14:05	ID117	Efficiency Improvements from Rounded Oscillating water Column entrances and Implications for Coastal Protection Lachlan Hick, Danica Tothova, <b>Richard Manasseh</b> , S. A. Sannasiraj	
14:20	ID104	Shoreline Oscillations Around a Pair of Breakwaters at Ponnai Fishery Harbour in Kerala <b>Kunhimammu Paravath</b> , Nasar T	
14:35	ID112	Coastal Morphological Changes Due to The Nivar Cyclone on The East Coast of India <b>Gracy Margret Mary R</b> , Sannasiraj S A, Sundar V, Kumaran Raju D	



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14:50	ID111	An Empirical Model for Natural Beach Erosion Under Waves Ye Htet Oo, <b>Hong Zhang</b>
15:05	ID118	Digital Transformation for Managing Offshore Structures <b>S Karunanithi</b> , Praveen Bhat, Nitin Nehra, Amit Jain, Rachit Agarwal

**FEEDBACK & CLOSING (15:20 – 16:20)**

**HIGH TEA (16:30 – 17:00)**