



## TECHNICAL PROGRAM

October 24, 2022			
Time	Activity		
08:00 - 13:00	Technical Tour I	Upper Ganga Canal	
October 25, 2022			
Time	Activity		
10:00 - 13:00	Workshop on Non-linear Weirs	Conference Room, Civil Eng. Department	
13:00 - 14:00	Lunch	Lawn of Civil Eng. Department	
14:00 - 16:00	Workshop on Non-linear Weirs	Conference Room, Civil Eng. Department	
16:00 - 16:30	Tea Break	Lawn of Civil Eng. Department	
16:30 - 17:30	Hands-on Experiments	Hydraulics Laboratory, Civil Eng. Department	
19:30 - 21:30	Workshop Dinner	Lawn of Civil Eng. Department	
October 26, 2022			
Time	Activity		
08:00 - 09:30	Registration	Room No. L2-005 A P J Abdul Kalam Block	
09:30 - 10:30	Inauguration	Room No. L2-103 A P J Abdul Kalam Block	
10:30 - 11:00	High Tea	A P J Abdul Kalam Block	
11:00 - 11:40	Keynote Lecture-1	<b>Fluid mechanics past hydraulic structures: A shift in paradigm</b> Fabian A. Bombardelli, University of California, Davis L2-103 Chair: Hubert Chanson	
11:40 - 12:20	Keynote Lecture-2	<b>Experiences from training the Brahmaputra-Jamuna River</b> Erik Mosselman, Deltares, Netherlands L2-103 Chair: Stefano Pagliara	
12:20 - 13:00	Keynote Lecture-3	<b>The Challenge of Rock Scour Assessment at High Head Spillways</b> Anton J. Schleiss, EPFL, Switzerland L2-103 Chair: Erik Mosselman	
13:00 - 14:00	Lunch	A P J Abdul Kalam Block	
14:00 - 15:30	Technical Sessions	TS-1: Spillways L2-103	TS-2: Energy Dissipators L2-104
15:30 - 16:00	Tea Break	A P J Abdul Kalam Block	
16:00 - 17:30	Technical Sessions	TS-3: Intakes and outlets L2-103	TS-4: Energy Dissipators L2-104
17:30 - 18:30	Open HS Committee meeting	L2-103	
19:30 - 22:30	Symposium Dinner	Community Centre	
October 27, 2022			
09:00 - 09:40	Keynote Lecture-4	<b>Modifying the Mosul Dam Bottom Outlet and Flip Bucket</b> Mike Phillips, US Army Corps of Engineers L2-103 Chair: Brian Crookston	

09:40 – 10:20	Keynote Lecture-5	<b>Composite Modelling for Hydraulic Structures Design</b> Sebastien Ercicum, Liege University, Belgium L2-103 Chair: Fabian A. Bombardelli		
10:20 – 11:00	Keynote Lecture-6	<b>Hydraulic Behaviour of In-Stream Low Head Structures for River Restoration</b> Stefano Pagliara, University of Pisa, Italy L2-103 Chair: Z. Ahmad		
11:00 - 11:30	Tea Break	A P J Abdul Kalam Block		
11:30 - 13:00	Technical Sessions	TS-5: Non-Linear Weirs L2-103	TS-6: Sediment Transport L2-104	
13:00 - 14:00	Lunch	A P J Abdul Kalam Block		
14:00 - 15:30	Technical Sessions	TS-7: Physical & Numerical Modelling L2-103	TS-8: Scour around Hydraulic Structures L2-104	TS-9: Training and Protection Works L2-005
15:30 - 16:00	Tea Break	A P J Abdul Kalam Block		
16:00 - 17:30	Technical Sessions	TS-10: Physical and Numerical Modeling L2-103	TS-11: Scour around Hydraulic Structures L2-104	TS-12: Miscellaneous L2-005
17:30 - 18:00	Valedictory Function	L2-103 Phil H. Burgi Best Paper Award Announcement		
18:00 - 18:30	Valedictory Tea	A P J Abdul Kalam Block		
19:30 - 22:00	Dinner	Lawn of Civil Eng. Dept.		
<b>October 28, 2022</b>				
<b>Time</b>	<b>Activity</b>			
08:00 - 19:00	Technical Tour-II	Tehri Dam		

## SESSION DETAILS

<b>Technical Session: TS-1</b>		<b>Date : 26/10/2022</b>	<b>Time: 1400 to 1530 Hrs</b>
<b>Theme: Spillways</b>		<b>Location: L2-103</b>	<b>Chair: Nils Ruther</b> <b>Co-Chair: A.K Singh</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1432	Surface Velocities and Free-surface Aeration in a Converging Smooth Chute during a Major Flood Event	Hubert Chanson, C.J. Apelt
2	1480	Experimental and Numerical Investigation on Critical Submergence for Square Water Intakes	Bhagwan Das, Z. Ahmad, Pramod Kumar Sharma
3	1442	Hydraulic Behavior of Spill channel of Polavaram dam spillway without left embankment	Vankayalapati S. Ramarao, Yogendra Nath Srivastava
4	1479	Recent challenges in design of spillway – An Indian scenario	R.R. Bhate
5	1435	Non-intrusive measurements of air-water flow properties in supercritical flows down grass-lined spillways	H. Cui, S.Felder, M. Kramer
<b>Technical Session: TS-2</b>		<b>Date : 26/10/2022</b>	<b>Time: 1400 to 1530 Hrs</b>
<b>Theme: Energy Dissipators</b>		<b>Location: L2-104</b>	<b>Chair: Stefano Pagliara</b> <b>Co-Chair: Masoud Ghodsian</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1446	Model Studies for Desilting Basin for Teesta-VI H.E. Project, Sikkim – A case study	M.Z. Qamar, M.K. Verma, A.P. Meshram, Neena Isaac
2	1472	Hydrodynamic behavior of stilling basins with deflectors to reduce supersaturation of total dissolved gases: analysis of Yacyretá and Jorge Cepernic dams	C.A. Fattor, J.D. Bacchiega, F. Romero, C. Fernández
3	1448	Numerical and Experimental Study on Energy Dissipation in Hydraulic Jump: A Comparison between Horizontal and Sloping Rough Channel Bed	Koroungamba Laishram, Thiyam Tamphasana Devi, Ngangbam Romeji Singh, Potsangbam Albino Kumar

4	1496	Investigation of Energy Attenuation, Flow Resistance And Impending Motion Of Downstream Bed Material In Block Ramps	Vishal Singh Rawat, Roshni Thendiyath, Michele Palermo, Simone Pagliara, Deep Roy
5	1431	Energy dissipation and flow regime downstream of trapezoidal piano key weirs	Xiaoyang Shen, Mario Oertel
<b>Technical Session: TS-3</b>		<b>Date : 26/10/2022</b>	<b>Time: 1600 to 1730 Hrs</b>
<b>Theme: Intakes and outlets</b>		<b>Location: L2-103</b>	<b>Chair: Claudio Fattor</b> <b>Co-Chair: Ajay Pradhan</b>
<b>S. No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1459	Feasibility Assessment of the Application of Delft3D Model to Simulate Flow over a Spillway in a Dam: Study Case of Hampaturi Dam in Bolivia	F.D. Oliveira, M.W. Heredia
2	1478	Antivortex device to operate pump intakes below the minimum submergence	Mauricio Abel Angulo, Arturo Rivetti, Cecilia Verónica Lucino, Sergio Oscar Liscia
3	1445	A Novel Dual Inlet Tangential Vortex Drop Shaft: An Analytical and Numerical Study	Sean Mulligan, Shane Pope
4	1495	Submerged flow regimes downstream of a weir at multiple slopes	K.S. Vikas, A. Sarkar
5	1437	Prediction of Discharge Coefficient of Circular Side Orifice through Machine Learning Technique	Syed Ahmed Noman, Ajmal Hussain, Mohd. Danish, Rashid Ali
<b>Technical Session: TS-4</b>		<b>Date : 26/10/2022</b>	<b>Time: 1600 to 1730 Hrs</b>
<b>Theme: Energy Dissipators</b>		<b>Location: L2-104</b>	<b>Chair: Stefan Felder</b> <b>Co-Chair: Binit Kumar</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1440	Effect of deficient tailwater on the performance of slotted roller bucket of Indira Sagar Dam, Madhya Pradesh	Vankayalapati S. Ramarao, Amit Kulhare
2	1473	Angle Effects of LIDAR Measurements on a Flat Surface and in High-velocity Spillway Flows	R. Li , K.D. Splinter M. Kramer & S. Felder
3	1427	Preliminary Evaluation and Design of a New Energy Dissipation Stilling Basin via Numerical and Experimental Modeling	F. Zabaleta, F.A. Bombardelli, S.A. Valbuena
4	1456	Stilling Basins Using Wedge-shaped Baffle Blocks	N. N. Pillai, M.L. Kansal
5	1469	Physical and Numerical Model Studies for Hydraulic Design of Stilling Basin as an Energy Dissipator of a Spillway-A Case Study	B.S. Sundaralal, Vaishali Prakash Gadhe, S.R. Patnaik, Amol Hanmantrao Gaikwad
<b>Technical Session: TS-5</b>		<b>Date : 27/10/2022</b>	<b>Time: 1130 to 1300 Hrs</b>
<b>Theme: Non-linear weirs</b>		<b>Location: L2-103</b>	<b>Chair: Sebastien Erpicum</b> <b>Co-Chair: Brian Crookston</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1471	Local Scour Downstream of Type-A Trapezoidal Piano Key Weir	Chonoor Abdi Chooplou, Aram Ghafouri, Masoud Ghodsian, Mohammad Vaghefi
2	1483	Hydraulic Performance of Piano Key Weir with Linear and Curvilinear Outlet Keys	Prakash Kumar Sinha, Binit Kumar, Zulfequar Ahmad
3	1489	Experimental study on three-dimensional velocities near Piano Key weirs	Binit Kumar, Zulfequar Ahmad
4	1455	A Numerical Investigation on Residual Energy of Labyrinth Weirs	Phillip Langohr, Brian M. Crookston, Daniel B. Bung
5	1458	Introduction and investigation of a large-scale piano key weir fabricated via rapid prototyping	M. Oertel, B. Belay, X. Shen, H. Willems
<b>Technical Session: TS-6</b>		<b>Date : 27/10/2022</b>	<b>Time: 1130 to 1300 Hrs</b>
<b>Theme: Sediment Transport</b>		<b>Location: L2-104</b>	<b>Chair: Subhasish Dey</b> <b>Co-Chair: Pramod K Sharma</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>

1	1474	River aggradation-degradation under sand mining: experimental and numerical studies	Nejib Hassen Abdullahi, Zulfequar Ahmad
2	1452	Effect of Diameter and Inlet-depth on Hydro-suction performance of a Suction pipe	Akash Jaiswal, Zulfequar Ahmad, Surendra Kumar Mishra
3	1498	Bed load computation for gravel particles in gravel-silt mixture	Umesh K. Singh, Sanjeet Kumar, Z. Ahmad
4	1457	2-D Simulation of flow structures over dunes for flow characteristics estimation	Mohammad Sharifi, Mohammad Reza Majdzadeh Tabatabai, Seyed Hossein Ghoreishi Najafabadi
5	1500	Predicting riverbed deformation during floods for a sustainable design of headworks structures	Ishwar Joshi, Umesh Singh, Meg Bahadur Bishwakarma, Y. Kitamura, Leif Lia
<b>Technical Session: TS-7</b>		<b>Date : 27/10/2022</b>	<b>Time: 1400 to 1530 Hrs</b>
<b>Theme: Physical and Numerical Modelling</b>		<b>Location: L2-103</b>	<b>Chair: Elena Pummer</b> <b>Co-Chair: Md Saud Afzal</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1482	CFD-Based Modeling for Computing Discharge Coefficient of an Ogee Spillway	Hariom Gautam, Zulfequar Ahmad, Pramod Kumar Sharma
2	1454	Effect of sinuosity variation on flow characteristics of sand mined sinuous channel using numerical modeling	O.P. Maurya, K.K. Nandi, S. Dutta
3	1451	Estimation of Discharging Capacity and assessing the performance of Overflow Spillway with Full and Partial Operation of Gates using Numerical Modelling	Prajakta P. Gadge, Kunal Kapur
4	1426	Numerical simulation of air entrainment in stepped spillways	F. Zabaleta, S. Márquez Damián, F.A. Bombardelli
5	1492	SPH simulation of non-aerated flow over smooth invert, converging spillways	J.D. Nóbrega, J. Matos, H.E. Schulz & R.B. Canelas
<b>Technical Session: TS-8</b>		<b>Date : 27/10/2022</b>	<b>Time: 1400 to 1530 Hrs</b>
<b>Theme: Scour around Hydraulic Structures</b>		<b>Location: L2-104</b>	<b>Chair: Michele Palermo</b> <b>Co-Chair: Manish Pandey</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1461	Jet scour in cohesive and non-cohesive soils	Jessica Di Nardi, Michele Palermo, Stefano Pagliara, Fabian Bombardelli
2	1481	Scour downstream of a broad crested drowned weir	Rajat Chauhan, Rakesh Kumar Chaudhary, Zulfequar Ahmad
3	1494	Preliminary analysis of the effect of worked wood piles in straight channels	D. Roy, S. Pagliara
4	1499	Calculating local pier scour in coarse-bed streams	D.C. Froehlich
5	1439	Plunge pool rock scour assessment by fluid-solid coupling	E. F. R. Bollaert, M. Grünzner
<b>Technical Session: TS-9</b>		<b>Date : 27/10/2022</b>	<b>Time: 1400 to 1530 Hrs</b>
<b>Theme: Training and Protection Works</b>		<b>Location: L2-005</b>	<b>Chair: D.C Froehlich</b> <b>Co-Chair: Ajmal Hussain</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1441	Bank scour protection using spur dyke in a meandering channel under low flow velocity	Nishank Agrawal Ellora Padhi
2	1477	Numerical modeling for optimization of the aspect ratio of submerged vanes for the purpose of sediment deflection in rivers	V. Chauhan, R. Chavan, G.D. Singhal
3	1475	Experimental evaluation of drag force on different shapes of pontoons at different water stream velocities at specified loads and submergence	R. B. Deogade, H. R. Khandagale, Shri. M. Someshwara
4	1476	Performance testing of acoustic doppler current profiler used for stream flow measurement	R. B. Deogade, H. R. Khandagale, Shri. M. Someshwara

5	1447	Porous Concrete Slabs Underlain by Polypropylene Fabric for Restoration of Beaches	N.N. Pillai, M.L. Kansal, R. Ramkrishnan
<b>Technical Session: TS-10</b>		<b>Date : 27/10/2022</b>	<b>Time: 1600 to 1730 Hrs</b>
<b>Theme: Physical and Numerical Modelling</b>		<b>Location: L2-103</b>	<b>Chair: Mike Phillips</b> <b>Co-Chair: Zulfequar Ahmad</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1501	Predicting Density-driven Exchange Flows through the West Crack Breach of the Great Salt Lake Causeway with CFD and ANN	B.M. Crookston, M. Rasmussen, E. Larsen, H. Kartchner, S. Dutta
2	1433	Hydrodynamics of Permeable Horseshoe Obstacle in Fluvial Environment: a Physical Modelling	Hubert Chanson, Hoit Kit Lee, William Johnson
3	1434	Near-full-scale physical modelling and open-channel flow velocity in a fish-friendly culvert with full-height sidewall baffles	Jiayue Hu, Youkai Li, Hubert Chanson
4	1484	Physical and numerical model studies of Hirakud dam additional spillway –a case study	Vaishali P. Gadhe, S.R. Patnaik
5	1449	Flow over orifice spillway: Physical and numerical study for spillway profile design of hydroelectric project	Sushma Vyas, Y. N. Srivastava

<b>Technical Session: TS-11</b>		<b>Date : 27/10/2022</b>	<b>Time: 1600 to 1730 Hrs</b>
<b>Theme: Scour around Hydraulic Structures</b>		<b>Location: L2-104</b>	<b>Chair: Erik Bollaert</b> <b>Co-Chair: Pramod Narayan</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1470	Laws of turbulence and the estimation of turbulent kinetic energy budget for flow through a degraded channel-bed	Mosedul Sarkar, Sankar Sarkar
2	1464	Numerical modelling of scour and flow field for two different arrangements of piers using SSIIM model	Sushant Kumar Biswal, Animesh Das
3	1493	Scour geometry and dune formation characteristics around customised structure in channels	Rajib Das, Subhasish Das, Michele Palermo, Deep Roy, Simone Pagliara
4	1491	Estimation of maximum scour depth and scour pattern around submerged spur-dyke	Manish Pandey, Manali Pal
5	1467	An experimental study on scour at zero degree confluent channels	Mohd Faisal Ansari, Mohammad Aamir, Zulfequar Ahmad

<b>Technical Session: TS-12</b>		<b>Date : 27/10/2022</b>	<b>Time: 1600 to 1730 Hrs</b>
<b>Theme: Theme: Miscellaneous</b>		<b>Location: L2-005</b>	<b>Chair: Sean Mulligan</b> <b>Co-Chair: Kramer Matthias</b>
<b>S No.</b>	<b>Paper ID</b>	<b>Title</b>	<b>Author(s)</b>
1	1444	Experimental optimization of a gravel trap in a gallery	S. Erpicum, N. Claude, B. Dewals, P. Archambeau, M. Piroton
2	1438	Investigation on near bed flow features over a water-worked gravel bed	Ellora Padhi, Nishank Agrawal
3	1436	Reynolds Stress Modelling of Supercritical Flow in a Narrow Channel	S. Kadia, N. Rüther, E. Pummer
4	1453	Importance of risk and hazard assessment of river projects in India	Jitesh N. Vyas, Supriya Nath and R. B. Deogade
5	1430	Designing Smooth Mixed-Geometry Canal Transition	D.C. Froehlich



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