

## AWARDS

Given the 20<sup>th</sup> anniversary of the IAHR Hydraulic Structures Technical Committee in 2018, the Leadership Team decided to create the Philip H. Burgi Best Paper Award, named after the first chair of the Technical Committee. This award aims at rewarding the best technical paper presented during the International Symposium on Hydraulic Structures.

Authors aiming at applying to Philip H. Burgi Best Paper Award–ISHS 2022 should mention it when submitting their abstract. Nominated papers will be selected prior to the symposium regarding their scientific content, innovation and impact as well as link with hydraulic structures. Award winner will be selected among selected papers after oral presentations and will be announced during the ISHS banquet.

## TECHNICAL TOUR

**Tehri Dam:** It is one of the highest dams of its type in the world on the Bhagirathi River near Tehri in Uttarakhand, India. Its length is 575 m, crest width 20 m, and base width 1,128 m. The dam creates a reservoir of 4.0 km<sup>3</sup> with a surface area of 52 km<sup>2</sup>. It comprises of a 260.5 m high Earth & Rockfill dam, a Spillway System having one Chute Spillway and four Shaft Spillways designed for PMF of 15540 m<sup>3</sup>/s and a drop of 220 m and an underground Power House containing four Turbine/Generator sets of 250 MW each, designed to operate with a head variation of 90 m. Project was commissioned in 2006-07 and all four machines of Tehri Power Station are under commercial operation.



**Upper Ganga Canal:** After the disastrous Agra famine of 1837–38, in which nearly 800,000 people died, Colonel Proby Cautley, who has been affectionately remembered as a British Engineer with an Indian heart, conceived a canal irrigation system known as upper Ganga canal during the period 1840-1854. Its command area is 24000 km<sup>2</sup> and augmented flow is 297 m<sup>3</sup>/s. The system consists of main canal of 272 miles and about 4000 miles long distribution channels. The upper Ganga canal was the largest and costliest man-made waterway in the world in its opening year 1854. Various types of cross-drainage works are provided on the canal. Acciavatti writes in his book that engineers came from around the world to see such cross drainage works which outdid any canals and aqueducts that had been built before. Four major cross-drainage works are Ranipur Syphon, Pathri super passage, Dhanuri level crossing and Solani aqueduct which was ranked as one of the most remarkable massive brick masonry structure in the whole world. This canal was the reason why the first engineering college in India, the Thomason College of Civil Engineering was set up at Roorkee which was later converted into IIT Roorkee in the year 2001.

## TECHNICAL THEMES

### Storage and Diversion Structures

Dams and Weirs  
Spillways  
Intakes and outlets  
Fish passes  
Navigational locks

### Energy Dissipators

Stilling basins  
Block ramps  
Stepped spillways  
Plunge pools

### Flow Conveyance Structures

Canals, tunnels, pipes  
Penstocks & surge tanks  
Flood mitigation channels  
Gates and Valves

### Physical and Numerical Modeling

Instrumentation  
Scale effects  
Modelling of roughness & sediment  
Multiphase modelling  
Hybrid modelling  
Fluid structure interaction  
Case studies and prototype measurements

### Scour around Hydraulics Structures

Scour and sediment transport  
Aggradation and degradation  
River training and protection works

### Coastal Engineering

Ports and harbours  
Coastal and offshore structures  
Caisson & rubble mound breakwaters

### Best Practices in Risk Management

Dam safety and rehabilitation  
Risk and hazard assessment  
Sustainable design  
Adaptation to climate change

### Miscellaneous Structures

Non-linear weirs  
Pump sump  
Trench/tyrolian weirs  
Permeable weirs

### Reservoir Sedimentation

## PAPER SUBMISSION

Authors are invited to submit abstract (in English) by 15 January 2022 followed by a full paper (in English) by 20 April 2022, if the abstract is accepted. Templates for abstract and paper submission along with Instructions are available on the Symposium webpage ([www.ishs2022.iitr.ac.in](http://www.ishs2022.iitr.ac.in)). The abstracts and papers will be peer reviewed by the International Scientific Committee and all presented papers will be included in the Proceedings of the Symposium. The technical program will consider oral and poster presentations; the form of presentation for each paper will be decided upon receipt of the final version.

**Link for submission :** <https://digitalcommons.usu.edu/ishs/>

## INVITATION

The local organizing committee is delighted to invite you to participate in the 9<sup>th</sup> International Symposium on Hydraulic Structures (ISHS 2022) to be held at Indian Institute of Technology (IIT) Roorkee, India during 24-27 October, 2022. This symposium will bring together academia and industry from across the globe to discuss issues and solutions in the design and construction of hydraulic structures. The symposium will provide a distinctive opportunity for engineers and researchers to present their works and be mentored by senior engineers and researchers. The symposium will be organized under the aegis of IAHR, Indian Society for Hydraulics (ISH), CWC, CBIP, India.



Anderson Weir, India

## ABOUT IIT ROORKEE

Indian Institute of Technology Roorkee is among the foremost of institutes of national importance in higher technological education and in engineering, basic and applied research. The Institute will celebrate its demisemisept-centennial in year 2022. The Department of Civil Engineering at the IIT Roorkee is the oldest and the largest in the country and is considered as the best in the country for education in Civil Engineering. It was established on October 19, 1847 as Roorkee College of Civil Engineering and renamed as the Thomson College of Civil Engineering in 1854. The department is producing several eminent engineers who are making notable contributions in the planning and execution of Civil Engineering projects in India as well as abroad. Hydraulics Laboratory of Civil Engineering was established in 1956, having a floor area of 4400 m<sup>2</sup> and a discharge of 1.0 m<sup>3</sup>/s and equipped with state-of-art equipments.

## TRAVEL INFORMATION

Roorkee is a city in North India and spread over a flat terrain under Sivalik Hills of Himalayas. The city is developed on the banks of Ganges Canal, its dominant feature, which flows from north-south through middle of the city. It is well connected with New Delhi, the capital of India by train (<https://etrain.info/in>) and road. Nearest domestic airport is about 60 km from Roorkee at Dehradun while International airport is Indra Gandhi International (IGI) Airport, New Delhi, which is about 200 km from Roorkee. A cab takes about four hour to travel from IGI airport to Roorkee and about one and half hour from Dehradun Airport to Roorkee.



Tehri Dam, India

## SYMPOSIUM FORMAT

The Symposium would be four days in duration. A workshop shall be organized on the first day while next two days will be dedicated to ISHS technical sessions, including keynote addresses. The final day will be a technical field tour.

## TIME SCHEDULE

|                                  |   |                    |
|----------------------------------|---|--------------------|
| Abstract submission              | : | 15 January 2022    |
| Abstract acceptance              | : | 01 March 2022      |
| Full paper submission            | : | 20 April 2022      |
| Notification of acceptance       | : | 25 May 2022        |
| Revised papers submission        | : | 01 July 2022       |
| Notification of final acceptance | : | 05 August 2022     |
| Registration Opens               | : | 10 August 2022     |
| Workshop                         | : | 24 October 2022    |
| Symposium                        | : | 25-26 October 2022 |
| Technical tour                   | : | 27 October 2022    |

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