



International Hydrological Programme

## **Integrated Basin Management under Changing Climate**

The Twenty-ninth IHP Training Course in Kyoto

3<sup>rd</sup> December – 12<sup>th</sup> December, 2019

Kyoto, Japan

Water Resources Research Center, Disaster Prevention Research Institute,  
Kyoto University  
Institute for Space-Earth Environmental Research, Nagoya University



## Outline

A 10-day training course on integrated basin management strategies including aspects of water resources and water-related disasters under climate change is programmed for participants from Asia-Pacific regions as a part of Japanese contribution to the UNESCO International Hydrological Programme (IHP). The course composed of a series of lectures, model practices, field exercise and technical visits will be held at Disaster Prevention Research Institute (DPRI), Kyoto University during 3rd December to 12th December 2019.

## Objectives

Development of resilient society has become an inevitable issue under the recent climate change increasing the frequency of extreme phenomena such as unprecedented flood and severe drought. In order to make our society more resilient, social adaptation to the hazards and countermeasure for disasters are required based on technologies for prediction and assessment on the future conditions of water resources.

In light of the Focal Area 1.1 “Risk management as adaptation to global change” and 1.2 “Understanding coupled human and natural processes” under the Theme 1 “Water related disasters under hydrological change” of the IHP-VIII, the 29<sup>th</sup> IHP Training Course in Kyoto will give an opportunity for participants: 1) to acquire the latest knowledge on climate change impacts on water resources, water-related disasters and ecosystem services, 2) to make a practice on rainfall-runoff-inundation analysis at river basin scale, and 3) to discuss effective strategies of integrated basin management based on scientific knowledge to realize a resilient society under climate change.

**Dates**        3<sup>rd</sup> December – 12<sup>th</sup> December, 2019

**Venue**        DPRI, Kyoto University, Uji, Kyoto, Japan

## Conveners

Convener: SUMI, Tetsuya (DPRI, Kyoto University)

Chief assistant: NOHARA, Daisuke (DPRI, Kyoto University)

Secretary: IBARAKI, Junko (DPRI, Kyoto University)

## Lecturers

HORI, Tomoharu	(DPRI, Kyoto University)
ICHIKAWA, Yutaka	(Graduate School of Engineering, Kyoto University)
KANTOUSH, Sameh	(DPRI, Kyoto University)
KIM, Sunmin	(Graduate School of Engineering, Kyoto University)
KOBAYASHI Sohei	(DPRI, Kyoto University)
NAKAKITA, Eiichi	(DPRI, Kyoto University)
NOHARA, Daisuke	(DPRI, Kyoto University)
SAYAMA, Takahiro	(DPRI, Kyoto University)
SUMI, Tetsuya	(DPRI, Kyoto University)
TACHIKAWA, Yasuto	(Graduate School of Engineering, Kyoto University)
TAKARA, Kaoru	(Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University)
TAKEMON, Yasuhiro	(DPRI, Kyoto University)
TANAKA, Kenji	(DPRI, Kyoto University)
TANAKA, Shigenobu	(DPRI, Kyoto University)
YOROZU, Kazuaki	(Graduate School of Engineering, Kyoto University)

### **Lectures at the Seminar Room (S217D) of DPRI, Kyoto University**

Lecture 1	Fundamentals of land-surface processes	K. Tanaka
Lecture 2	Fundamentals of basin-scale hydrological analysis	Y. Ichikawa
Lecture 3	Climate change impact assessment on disaster environments (tentative)	E. Nakakita
Lecture 4	Fundamentals of optimum operation of reservoir systems	T. Hori
Lecture 5	Fundamentals of rainfall-runoff-inundation modelling	T. Sayama
Lecture 6	Fundamentals of hydrological extreme analysis	S. Tanaka
Lecture 7	Resilient society development under changing climate	K. Takara
Lecture 8	Flash floods management in arid and semi-arid regions	S. Kantoush
Lecture 9	Integrated sediment management for reservoir sustainability	T. Sumi
Lecture 10	UNESCO-IHP and climate change adaptation strategy in Asia (tentative)	Y. Tachikawa
Lecture 11	Fundamentals of river ecosystem	Y. Takemon

### **Indoor practices at the Seminar Room (S217D) of DPRI, Kyoto University**

Exercise 1	Processing method of geographical and meteorological data	K. Tanaka & K. Yorozu
Exercise 2	Downscaling of GCM data	S. Kim
Exercise 3	Hydrological extreme analysis	S. Tanaka
Exercise 4	Rainfall-runoff-inundation modelling	T. Sayama
Exercise 5	Follow-up of Exercises 1, 2, 4	K. Tanaka, S. Kim & T. Sayama
Exercise 6	Optimum operation of reservoir systems	D. Nohara
Exercise 9	Follow-up of Exercises 2, 4, 6	S. Kim, T. Sayama & D. Nohara

### **Model experiment (DPRI, Kyoto University)**

Exercise 7	Sediment transport & reservoir operation experiments	S. Kantoush / D. Nohara
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### **Field survey and technical visits**

Technical Visit 1	(Lake Biwa, Seta River, Amagase & Hiyoshi Dams)	Y. Takemon & S. Kobayashi
Technical Visit 2	(Ujigawa Open Laboratory)	Y. Takemon & S. Kobayashi
Exercise 8	River bed survey and habitat evaluation at the Kizu River	Y. Takemon & S. Kobayashi

### **Training course documents**

The training course materials will be available on our website in due course. The participants are requested to download them in advance for preparation for the training course.