International Hydrological Programme

Integrated Basin Management under Changing Climate

The 30th IHP Online Training Course OTC- Kyoto

1st December – 10th December, 2020

By Kyoto University, Japan

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

Outline

The On-line Training Course (OTC) on integrated basin management strategies, which aims to present, via internet, aspects of water resources and water-related disasters under climate change for participants from Asia-Pacific regions as a part of Japanese contribution to the UNESCO International Hydrological Programme (IHP). The OTC composed of a series of lectures, model practices, field visit for your local target river basin and self-paced practicing of various software's will be held at Disaster Prevention Research Institute (DPRI), Kyoto University during 1st December to 10th December 2020.

Objectives

The on-line training course is oriented to the study of integrated basin management: hydrological extreme analysis, assessing the impacts of climate change, rainfall-runoff-inundation modelling, reservoir sustainability, optimum operation and management, as well as knowledge of the interrelationship with river ecosystem and environment. Development of resilient society has become an inevitable issue under the recent climate change increasing the frequency of extreme phenomena such as unprecedented floods and severe droughts. In order to make our society more resilient for such unprecedented extremes, social adaptation and countermeasure are required based on technologies for prediction and vulnerability assessments to meet the requirements of future water availability under changing climate.

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 30th IHP OTC- Kyoto will give an opportunity for participants: 1) to acquire the latest knowledge on climate change impacts on water resources, water and weather related disasters, hydrological measurements of large river basins 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 1st December – 10th December, 2020

Venue DPRI, Kyoto University, Uji, Kyoto, Japan

Conveners

Convener: SUMI, Tetsuya (DPRI, Kyoto University)
Chief assistant: KANTOUSH, Sameh (DPRI, Kyoto University)
Secretary: OBARA, Hisae (DPRI, Kyoto University), IBARAKI, Junko (DPRI, Kyoto University)

Lecturers

HORI, Tomoharu	(DPRI, Kyoto University)
ICHIKAWA, Yutaka	(Graduate School of Engineering, Kyoto University)
KANTOUSH, Sameh A.	(DPRI, Kyoto University)
KAWAIKE, Kenji	(DPRI, Kyoto University)
KIM, Sunmin	(Graduate School of Engineering, 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)

Online Lectures

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	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	UNESCO-IHP and climate change adaptation strategy in Asia	Y. Tachikawa
Lecture 7	Integrated sediment management for reservoir sustainability	T. Sumi
Lecture 8	Fundamentals of hydrological extreme analysis	S. Tanaka
Lecture 9	Resilient society development under changing climate	K. Takara
Lecture 10	Hydrological measurements of large river basins	S. A. Kantoush
Lecture 11	Fundamentals of river ecosystem	Y. Takemon

Online Exercises

Exercise 1	Processing method of meteorological and geographical data	K. Tanaka & K. Yorozu
Exercise 2	Hands-on Fortran for PC problem solving	K. Tanaka & K. Yorozu
Exercise 3	Statistical downscaling of GCM data	S. Kim
Exercise 4	Rainfall-runoff-inundation modelling	T. Sayama
Exercise 5	Self schooling and build your target basin	Trainees
Exercise 6	Q & A Session	T. Sayama, K. Tanaka, S. Kim, K. Yorozu
Exercise 7	Self-paced practicing of RRI and modelling the target river basin	Trainees
Exercise 8	Hydrological extreme analysis	S. Tanaka
Exercise 9	Optimum operation of reservoir systems	D. Nohara
Exercise 10	Follow-up of Exercises with Q & A session	K. Tanaka, S. Kim, T. Sayama & D. Nohara

Self-Guided Field Visits

Technical Visit	(Select your Target River Basin)	Trainees

Training course materials

The training course materials will be available on our website (http://ecohyd.dpri.kyoto-u.ac.jp/en/index/ihptc2020.html) in due course. The participants are requested to download them in advance for preparation for the training course.

(Last updated on 17th July, 2020)