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

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)
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

Virtual or Self-Guided Field Visits

Due to current pandemic situation worldwide, the virtual or self-guided field visits are applied. Please select the target river basin for your case study and required presentations.

Examples:

1- River Basin nearby your **current Residential Area**;
2- River Basin within your **Home Country**;
3- River Basin **Worldwide** based on your interest.

Requirements

IHP-Training course participants should be reasonably proficient in English to understand lectures. Several software's such as Fortran compiler, OpenGrADS should be setup in your laptop PC before the training. Moreover, trainees should be familiar with the selected target river basin in their region.

Oral presentations and talks by trainees

As described in the program all trainees will be asked to provide various oral presentations and talks:

1- Self-introduction and country report (1st of December 2020)
2- Report presentation related to your selected case study of target river basin (10th December 2020)
3- Talks during the closing ceremony and awarding of IHP-TC certificate of completion

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 trainees are requested to download them in advance for preparation for the training course.

Instructions

After receiving your registration form, we will announce Zoom ID to access the online IHP-TC lectures and exercises. We will have a trial online session one day before the official start. If you have any questions and concerns, please feel free to contact us. We are looking forward to seeing you soon.

(Last updated on 12th of October, 2020)