International Hydrological Programme

Groundwater as a key for adaptation to changing climate and society

The Twentieth IHP Training Course

7 to 20 November, 2010

Nagoya and Kyoto, Japan

○ Research Institute for Humanity and Nature

○ Hydrospheric Atmospheric Research Center, Nagoya University

○ Water Resources Research Center, DPRI, Kyoto University

○ Graduate School of Science and Technology, Kumamoto University

○ Environmental Diplomatic Leader Education Program and
UNESCO-Chair Program, University of Tsukuba

Outline

This intensive training course on groundwater resources, science and management is intended for participants from the Asia-Pacific region. It represents a portion of Japan's contribution to UNESCO's International Hydrological Programme (IHP). The course is composed of a series of lectures and practice sessions led by experts in the field, as well as of several technical field visits. It will be mainly held at Nagoya University during the two weeks from 7-20 November 2010.

Objectives

Groundwater is a major source of daily water for people in the Asia-Pacific region and around the world. It is an important component in the global water cycle, and also a potential buffer to problems posed by irregular precipitation, including drought, increasing human demand for water and the associated pressures on surface water. Groundwater resources are also vulnerable, however, and may be negatively affected by human activity and contemporary climate change.

The 20th IHP training course has three major objectives: (1) to offer a thorough description of current knowledge of groundwater resources and management in relation to contemporary social and climate change in the Asia-Pacific region; (2) to conduct several practical training sessions of selected techniques for observing ground- and soil-water in hydrological systems; and (3) to discuss strategies by which groundwater can be effectively managed as an alternative source of adaptation and resilience to changing environments.

Course Contents (convener: Makoto Taniguchi)

Lecturers

ENDO Takahiro
(Graduate school of Life and Environmental Sciences, University of Tsukuba)
HIYAMA Tetsuya
(Research Institute for Humanity and Nature)
NAKANO Takanori
(Research Institute for Humanity and Nature)
NAKAYA Shinji
(Department of Civil Engineering, Shinshu University)
SHIMADA Jun
(Graduate School of Science and Technology, Kumamoto University)
TANG Changyuan
(Graduate School & Faculty of Horticulture, Chiba University)
TANIGUCHI Makoto
(Research Institute for Humanity and Nature)

TOKUNAGA Tomochika
(Graduate School of Frontier Sciences, The University of Tokyo)
TSUJIMURA Maki
(Graduate school of Life and Environmental Sciences, University of Tsukuba)
YAMANAKA Tsutomu
(Terrestrial Environment Research Center, University of Tsukuba)

Lectures at the Graduate School of Environmental Studies, Nagoya University

1 Global groundwater problems and adaptation for changing climate	M. Taniguchi
2 Hill slope hydrology and headwater control	M. Tsujimura
3 Vadose zone hydrology and groundwater recharge	T. Yamanaka
4 Institutions and laws for groundwater managements	T. Endo
5 Groundwater resources analysis	T. Tokunaga
6 Groundwater flow system and sustainable use	J. Shimada
7 Groundwater contamination and remediation	C. Tang
8 Traceability using stable isotope and chemical signals	T. Nakano
9 Numerical simulations of groundwater flow	S. Nakaya
10 Evaluation of groundwater vulnerability	T. Hiyama

Practices

A Measuring interaction of groundwater and surface water	J. Shimada, T. Hosono, K. Ichiyanagi
B Communication skills for capacity building	M. Taniguchi, T. Hiyama
C Numerical simulations for groundwater analyses	S. Nakaya

Technical tour

Kumamoto, lake Ezu, Shirakawa, Mt Aso, etc.

Schedule (7 to 20 November, 2010)

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7 (Sunday)	Arrival at Nagoya (Chubu) Airport	
8 (Monday)	9:30-12:00	Lecture 1* by M. Taniguchi
	14:00-16:30	Lecture 2* by M. Tsujimura
9 (Tuesday)	9:30-12:00	Lecture 3* by T. Yamanaka
	14:00-16:30	Lecture 4* by T. Endo
10 (Wednesday)	9:30-12:00	Lecture 5* by T. Tokunaga
	14:00-16:30	Lecture 6* by J. Shimada
11 (Thursday)	9:30-12:00	Lecture 7* by C. Tang
		Move to Kumamoto
12 (Friday)	8:30-19:00	Field Tour at Kumamoto
13 (Saturday)	9:30-12:00	Practice A** by J. Shimada, T. Hosono, K. Ichiyanagi
		Move to Kyoto
14 (Sunday)	13:30-16:30	International Symposium (Mielparque-Kyoto, Kyoto)
15 (Monday)	9:30-15:00	Expert Meeting (RHIN, Kyoto)
16 (Tuesday)	9:30-12:00	Practice B*** by M. Taniguchi, T. Hiyama
		Move to Nagoya
17 (Wednesday)	9:30-12:00	Lecture 8* by T. Nakano
	14:00-16:30	Lecture 9* by S. Nakaya
18 (Thursday)	9:30-12:00	Practice C* by S. Nakaya
	14:00-16:30	Lecture 10* by T. Hiyama
19 (Friday)	9:30-12:00	Discussion and Ceremony for diploma presentation
	12:00-13:30	Farewell party
20 (Saturday)	Departure from Nagoya (Chubu) Airport	

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* All lectures and practice C are held at Lecture Room No.1 of the Graduate School of Environmental Studies, Nagoya University. Refer the following site for access and map of the Campus. http://www.env.nagoya-u.ac.jp/en/contact/map.html

** Practice A is held at Kumamoto University. Refer the following site for access and map of the campus. http://www.kumamoto-u.ac.jp/e/aboutKU/visitorinfo/kurokami.html

*** Practice B is held at Research Institute for Humanity and Nature. Refer the following site for access and map of the institute. http://www.chikyu.ac.jp/rihn_e/access/index.html