A summary of the 26th IHP training course on "Coastal Vulnerability and Freshwater Input"

1. Outline

A short training course "Coastal Vulnerability and Freshwater Discharge" will be programmed for participants from Asia-Pacific regions as a part of the Japanese contribution to the International Hydrological Program (IHP). The course is composed of a series of lectures and practice sessions.

2. Objectives

Large number of population is living in coastal area of Asian countries. The area is also important for various human activities including fisheries, transportation, farming, and many other industries. The population explosion of the coastal area often makes pollution of waters, both fresh and salt waters, inducing environmental problems in the area. Freshwater input to the coastal area modified the circulation of waters. Large amount of materials are known to be discharged to the coastal water with the freshwater as natural, and they played important roles to keep the coastal ecosystem; however, the pollution of the freshwater also alternate the coastal ecosystem. River is known as a major source of freshwater, and more recently importance of underground discharge has been also recognized. Those freshwater discharges are also changing significantly by the climate change, construction of dams on the river, and use of freshwater. Coastal shallow area is often destructed to make a land for farming, industry or living area with reclamation and other human activities. Recently, it was shown that those coastal areas are vulnerable for tsunami caused by earthquake and storm surge caused by typhoon, and radical changes can be happened by those natural hazards. It is necessary to manage the area to make comfortable, productive and safe.

In this training course, the basic knowledge of physical, biological and chemical environments of coastal waters, and forcing including freshwaters from river and underground discharge, will be covered. Furthermore, interaction between nature of coastal area and human will be discussed. Technical training on-board of Training Vessel Seisui-Maru, Mie University, will cover the basic technics to sample waters, analyze the quality and interpret the data in large estuarine Ise and Mikawa Bay. Demonstration of satellite and numerical models will be also covered.

3. Course Contents

3-1. Conveners

Convener : Prof. ISHIZAKA, Joji
Assistant : Assoc. Prof. AIKI, Hidenori
Assist. Prof. MINO, Yoshihisa
Assist. Prof. TOMITA, Hiroyuki
Secretary : Ms. HAGA, Saori
Ms. NIIZUMA, Ryoko
Ms. ASAI, Ayumi
Institute for Space-Earth Environmental Research (ISEE), Nagoya University

3-2. Lecturers

ISHIZAKA, Joji
AIKI, Hidenori
MINO, Yoshihisa
Institute for Space-Earth Environmental Research (ISEE), Nagoya University
ISHIKAWA, Satoshi
TANIGUCHI, Makoto
Research Institute for Humanity and Nature
TOMITA, Takashi
Graduate School of Environmental Studies, Nagoya University
KASAI, Akihide
Graduate School of Fisheries Sciences, Hokkaido University
TANAKA, Kenji
Disaster Prevention Research Institute, Kyoto University
TERAUCHI, Genki
Northwest Pacific Region Environmental Cooperation Center
UMEZAWA, Yu
Graduate School of Fisheries Science and Environmental Studies, Nagasaki University
YAMASHITA, Hiromi
College of Asia Pacific Studies, Ritsumeikan Asia Pacific University

3-3. Key Note Speakers

YANAGI, Tetsuo
International EMECS Center
CHEN, Chen-Tung Arthur
Taiwan National Sun Yat-sen University

3-4. Contents of Key Note Speeches

K1: *Satoumi* Concept	Nov. 29 pm	YANAGI T.
K2: Melting Tibetan Ice Shield	Nov. 30 pm	CHEN A.

3-5. Contents of Lectures

L1: River Discharge	Nov. 28 am	TANAKA K.
L2: Submarine Ground Water Discharge	Nov. 28 pm	TANIGUCHI M.
L3: Coastal Water Circulation	Nov. 29 am	KASAI A.
L4: Nutrient Dynamics	Nov. 30 am	UMEZAWA Y.
L5: Plankton Ecosystem	Dec. 5 am	ISHIZAKA J.
L6: Influence to Fisheries	Dec. 6 am	ISHIKAWA S.
L7: Tsunami and Disaster Prevention	Dec. 7 am	TOMITA, T.
L8: Tidal Flat Conservation	Dec. 8 am	YAMASHITA H.

3-6. Contents of Exercise

E1: Satellite Data Analysis	Dec. 5 pm	TERAUCHI G.
E2: Cruise Data Analysis	Dec. 6 pm	ISHIZAKA J.
E3: Coastal Model Output Analysis	Dec. 7 pm	AIKI H.
E4: Making Reports and Disucssions	Dec. 8 pm	

ISHIZAKA J., AIKI H., and YAMASHITA H.

3-7. Field Workshop and Exercise

W1: Cruise in Ise Bay by T/V Seisui-Maru, Mie University

ISHIZAKA J., AIKI, H., and MINO Y.

4. Schedule (27 November to 10 December, 2016)

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27 (Sunday)	Arrival at Central Japan International Airport and Move to Nagoya University	
28 (Monday)	09：30-09：40	Registration & Guidance
	09：40-12：10	Lecture 1
	13：30-16：00	Lecture 2
	17：00-19：00	Welcome Party
29 (Tuesday)	09：30-12：00	Lecture 3
	14：00-16：30	Keynote 1
30 (Wednesday)	09：30-12：00	Lecture 4
	14：00-16：30	Keynote 2
	(Move to Mie)	
1 (Thursday)	Cruise in Ise/Mikawa Bay,	
2 (Friday)	Cruise in Ise/Mikawa Bay	
3 (Saturday)	Tour to Ise Shrine (Back to Nagoya)	
4 (Sunday)	Off	

5 (Monday)	09：30-12：00	Lecture 5
	13：30-17：00	Exercise 1
6 (Tuesday)	09：30-12：00	Lecture 6
	13：30-16：00	Exercise 2
7 (Wednesday)	09：30-12：00	Lecture 7
	13：30-17：00	Exercise 3
8 (Thursday)	09：30-12：00	Lecture 8
	13：30-17：00	Exercise 4
9 (Friday)	09：30-11：30	Report presentations and discussions
	11：30-12：00	Completion ceremony of this course
	13：30-15：30	Farewell party
10 Saturday)	Departure from Central Japan International Airport	

5. Downloading the Textbook for Participants from the Website

The textbook of “the 26th IHP Training Course”, which is converted in PDF style, will be prepared and will be put on the IHP Nagoya/Kyoto website of “http://www.hyarc.nagoya-u.ac.jp/japanese/02activity/ihp/textbook/ihp_textbook.html”. The participants are requested to download such a PDF file from the website in advance as a preparation to the several lectures of the training course. The textbook should be constituted of contents (referred sentence bodies, figures, tables, pictures, equations and observed/calculated results) with authorized copyrights.

6. Participants

We had 15 participants; five each were supported by Institute for Space-Earth Environmental Research of Nagoya University (ISEE), PICES (North Pacific Marine Science Organization) and ISEE, and Disaster Prevention Research Institute of Kyoto University (DPRI). We also had 7 participants from Graduate School of Environmental Studies, Nagoya University. Their home countries were also diverse from Northeastern and Southeastern Asia (China (5), Japan (3), Indonesia (3), Korea (2), Russia (2), Thailand (2), Vietnam, Singapore) and US, Bulgaria, Mozambique. We also invited 2 keynote speakers from Taiwan (National Sun Yat-sen University) and Japan (International EMECS Center), and 11 lecturers (ISEE (3), Research Institute for Humanity and Nature (2), DPRI, Hokkaido University, Nagasaki University, Nagoya University, Ritsumeikan Asia Pacific University, North Pacific Environmental Center) using the support from ISEE as well as The Oceanographic Society of Japan, and Special Monitoring & Coastal Environmental Assessment Regional Active Center (CEARAC)/UNEP.

7. Participants Skill and Reactions

The participants are very active to learn from the training course. Not only just listen the lectures, they asked many questions during and after the lectures, and there are many interactions between lectures and participants. Some of them discussed with lectures and decided to have further communication after the training course. The participants experienced real oceanographic observation during the cruise on T/V Seisui-Maru of Mie University in Ise Bay. They experienced fun and serious parts of filed observation. Hands-on exercises for data analysis for satellite, cruise, and model data were also conducted, and participants could learn how to process the ocean environments data from various sources. Finally, they spend time to be divided four groups including three groups using data sources of hands-on exercises and one group using more brain-storming, and successfully conducted final presentations. This is a very hard and intensive work for them to deal with new opportunity and discuss with five to six participants to make one presentation, and it was a very good experience to work together with international participants.