Introduction of BRI & IISEE

Outline of IISEE Training Courses

Shoichi ANDO
Director
International Institute of Seismology and Earthquake Engineering (IISEE),
The Building Research Institute (BRI)

Organization of BRI

URL

IISEE: http://iisee.kenken.go.jp/

BRI: http://www.kenken.go.jp/english/

Group Training Courses of IISEE

- **Regular (Annual) Course**
  - 12 months (October to September)
  - Three main sub courses: (2011-2012)
    1. Seismology (9)
    2. Earthquake Engineering (10)
    3. Tsunami (5)
- **Global Seismological Observation Course**
  - 2 months (January to March)
  - Related to CTBT activity
  - 10 participants (capacity)

Seismology Course and Earthquake Engineering Course

- The necessity of the training on seismology and earthquake engineering was emphasized at the **2nd WCEE (**World Conference on Earthquake Engineering) in **1960**.
- Then, the training course (Seismology & Earthquake Engineering Courses) was held at the University of Tokyo and Waseda Univ. in **1960** & **1961.**

The 2nd Annual Training Courses Participants on Seismology and Earthquake Engineering (1961 - 1962)

Dr. Julio Kuroiwa (Peru)

Cooperation with MLIT and JICA

- In January **1962**, **IISEE** was established at BRI as the training organization.

Courtesy visit to Minister of Land, Infrastructure, Transport and Tourism (MLIT)

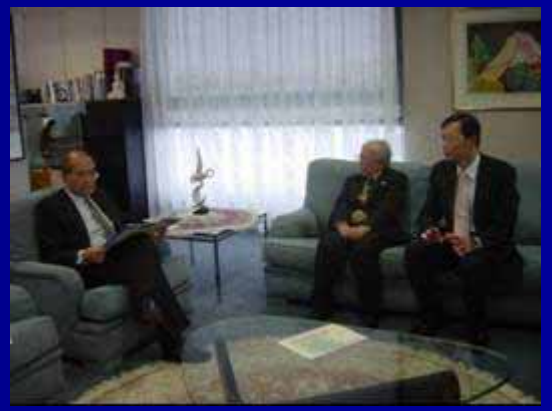
Visit by President of Japan International Cooperation Agency (JICA) to the course

Support by UNESCO

- In cooperation with UNESCO, the Japanese Government offered annual training courses from 1963 to 1972.
- Since 1972, the Japanese Government has continued to offer these courses independently.
- UNESCO sent experts to IISEE from 1985 to 1995.
- UNESCO resumed cooperation in 2006.
  Dispatch 2 experts in 2007.
  Donated textbooks.

Logo, granted by UNESCO

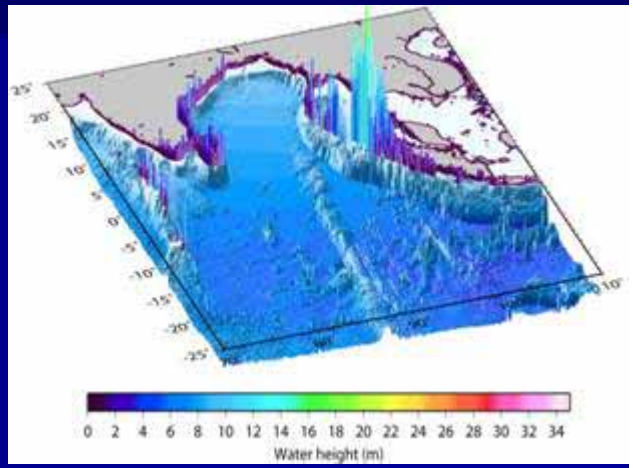
Tsunami Lecturer:
Dr. Laura Kong

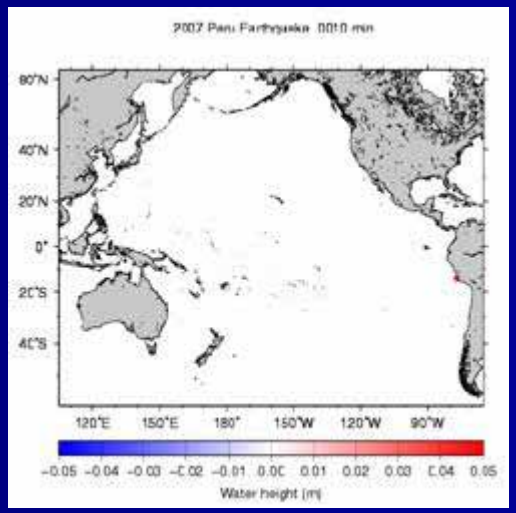


Meeting with Mr. Matsuura,
Director General of UNESCO

Tsunami Disaster Mitigation Course

- Gigantic tsunami generated by a major earthquake off Sumatra in 2004 wreaked havoc in the coastal areas of the Indian Ocean.
- In response, the Tsunami Disaster Mitigation Course was established in **October 2006**.





Height of tsunami along the coastlines devastated following the earthquake off Sumatra in 2004 (simulation result)

Tsunami Propagation (animation)

Master of Disaster Management

- From **2005-2006 course**, the curriculum of this course is approved as a master's degree program by National Graduate Institute for Policy Studies (GRIPS) and BRI.

  "Master of Disaster Management"
- On September 2006, 19 participants became the first graduates under new system.

Awarding of master's degree by Chief Executive of BRI

Regular Course: Objective

- Nurture of personnel who have acquired advanced technologies and knowledge in the fields of seismology, earthquake engineering, and tsunami and are able to establish, utilize, and disseminate earthquake and tsunami disaster mitigation technologies applicable to their respective countries and/or regions under consideration of their actual conditions, regulations and institutions.

Regular Course: Program

- **October – May**
  - **8 months**
  - **Group training on lecture study trips, colloquiums**
- **June – August**
  - **3 months**
  - **Individual studies on their respective themes**
- **September**
  - **Presentation & discussion on the results of individual studies**
  - **Closing Ceremony : Certificate, Diploma and Master's degree**

lecture

General meeting

study trip

Regular Course Lectures (1)

Seismology Course

- Computer
- Mathematics
- Theory of Seismic Wave
- Earthquake Observation
- Analyses of Teleseismic Records
- Source Mechanics
- Plate Tectonics
- Geophysical Exploration
- Seismic Micro Zonation
- etc.

Earthquake Eng. Course

- Computer
- Structural Analysis & Dynamics
- RC & S Structures
- Foundation Engineering
- Structural Testing
- Limit Analysis
- Design Code
- Seismic Micro Zonation
- etc.

Regular Course Lectures (2)

Tsunami Course

- **Computer** *
- **Mathematics** *
- **Theory of Seismic Wave** *
- **Source Mechanics** *
- **Plate Tectonics** *
- **Hydrodynamics**
- **Tsunami Propagation**
- **Tsunami Simulation**
- **Tsunami Early Warning System**
- **etc.**

* Joint Lectures with S Course

Relationship between IISEE, JICA, and GRIPS (1)

- **IISEE**: **Regular Course** (International Training on Seismology and Earthquake Engineering)
- **JICA**:

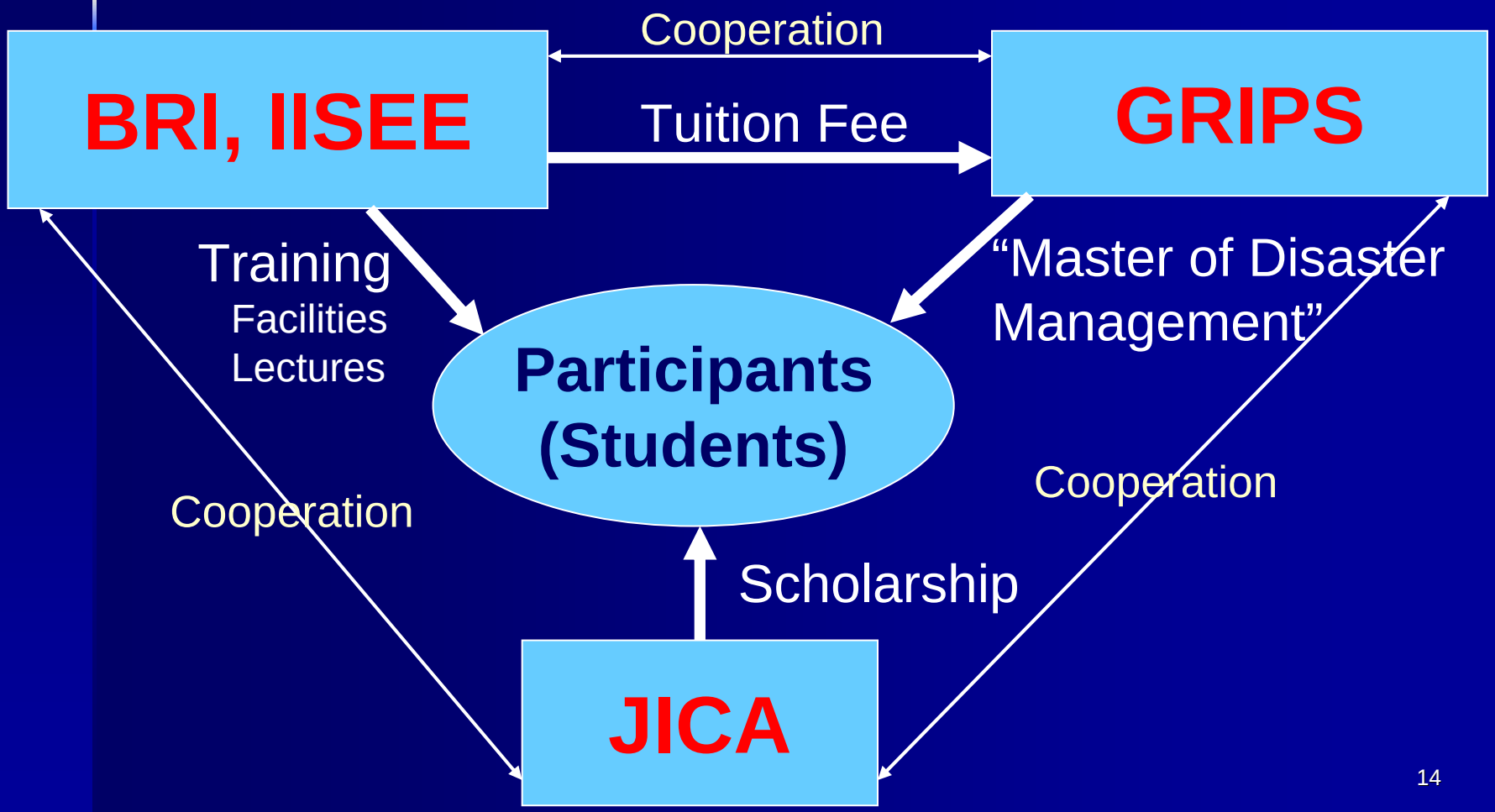
  1. **Seismology, Earthquake Engineering and Disaster Management Policy** (Group Training Course)

     → S & E Courses

  2. **Tsunami Disaster Mitigation Course** (Region-Focused Training Course)

     → T Course
- **GRIPS**: **Disaster Management Policy Program**

Relationship between IISEE, JICA, and GRIPS (2)

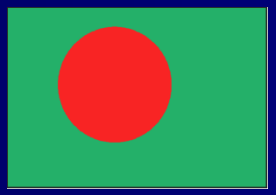


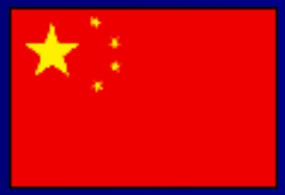
Regular Course Present Participants

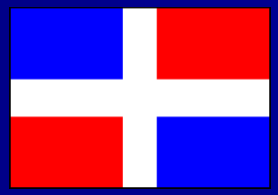
- **Seismology : 8 persons**
- **Earthquake Eng. : 10 persons**
- **Tsunami: 5 persons**

23 persons from 14 countries


Azerbaijan


Bangladesh


China

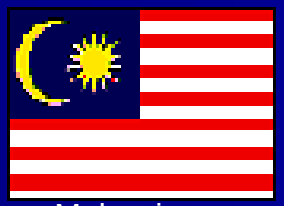

Dominica Rep.


El Salvador

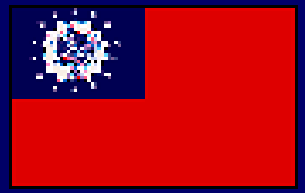

Haiti


Indonesia


Macedonia


Malaysia


Mongolia


Myanmar


Pakistan


Peru


Philippines

Global Seismological Observation Course

- The course commenced in 1995 one year before the Comprehensive Nuclear-Test-Ban Treaty (CTBT) was concluded in Disarmament Council at Geneva.
- The purpose is to train young people in order to obtain seismological knowledge and technologies for identification and detection of signals originated in underground nuclear tests.

Lecture by Dr. Suarez, former Director of IMS

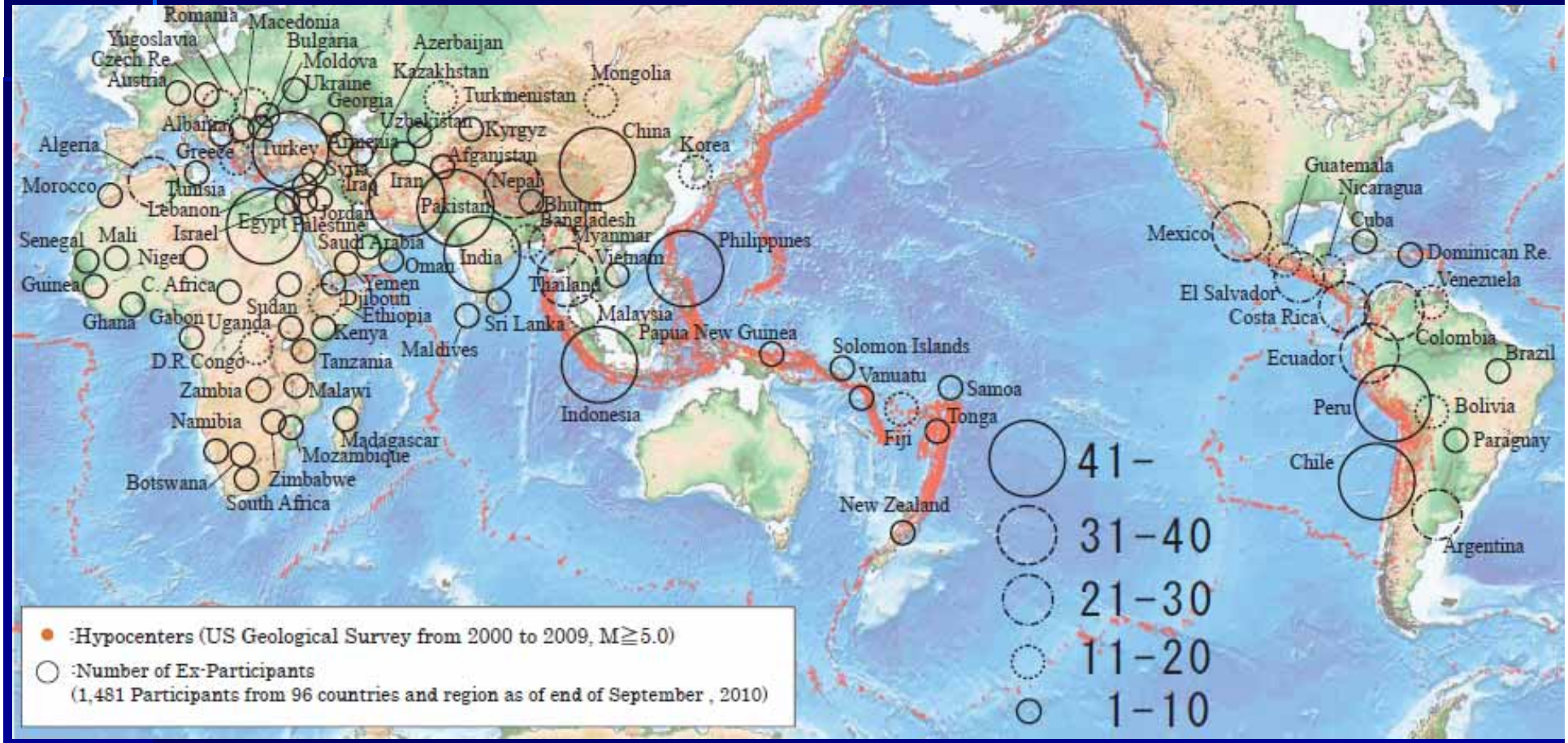
Study Trip to Hiroshima

Global Seismological Observation Course: Outline

- Participants : 10 person/year
- Target group : those who are expected to play important roles in the global monitoring network on nuclear tests
- Lectures, practices & field studies
  - **Subjects : Instrumentation & observation, analysis of teleseismic records, hypocenter location, observation and practices of seismic array, seismic array, source mechanism, general discrimination technique and so on.**

Graduates of IISEE Training Courses

Distribution of Graduates Countries (1960-2010)



Number of Graduates of IISEE (1960-2011): 1,525 (97 countries)

IISEE Website

http://iisee.kenken.go.jp/

BUILDING RESEARCH INSTITUTE B R I

IISEE INTERNATIONAL INSTITUTE OF SEISMOLOGY AND EARTHQUAKE ENGINEERING

日本語

- Home
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- Newsletter
- Training
- Publications
- Research
- Staff
- Meeting Calendar
- FAQs
- WWW Links
- Access
- Contact

148186

visitors since June 17, 2002

Others

Alumni Website

IPRED
International Platform for Reducing Earthquake Disasters

Recent updates

- IISEE Newsletter No.72 is issued on September 21, 2011.
- IISEE Newsletter Special Issue is issued on September 20, 2011.
- Report of damage by the 2011 off the Pacific coast of Tohoku Earthquake is added on September 14, 2011.
- IISEE Newsletter No.71 is issued on August 23, 2011.
- IISEE Newsletter No.70 is issued on July 20, 2011.
- IISEE Newsletter No.69 is issued on June 20, 2011.
- IISEE Newsletter No.68 is issued on May 23, 2011.
- IISEE Newsletter No.67 is issued on April 21, 2011.
- IISEE Newsletter No.66 is issued on March 25, 2011.
- Special page of the 2011 off the Pacific coast of Tohoku Earthquake is added on March 12, 2011.
- Special page of Off Sanriku Earthquake of 2011/03/09 is added on March 10, 2011.
- Special page of 2011/02/21 South Island of New Zealand Earthquake is added on February 23, 2011.
- IISEE Newsletter No.65 is issued on February 21, 2011.
- IISEE Newsletter No.64 is issued on January 20, 2011.

IISEE Net and Training

IISEENET Information Network of Earthquake Disaster Prevention Technologies — **Information Network**

IISEE-UNESCO Lecture Notes

IISEE E-learning

Synopsis Database

Bulletin Database

Earthquakes

The 2011 off the Pacific coast of Tohoku Earthquake on March 11, 2011

BRI Strong Motion Observation

Reports of Recent Earthquakes

Utsu Catalog
Damaging earthquakes in the world

Web-site example

Lecture Notes (UNESCO-IISEE)

Earthquake Engineering Course View (Regular Course)

Course ID#	Course Title	Days	Lecturer	Updated	Notes
E0-070-2007	Finite Element Method: (A) Introduction	3	Taiki SAITO, Toshihi...	2009-05-07	
E0-130-2007	Structural Dynamics: (A) Introduction and Vibration Analysis	5	Izuru OKAWA (BRI), K...	2009-03-18	
E0-140-2007	Structural Dynamics: (B) Spectral Analysis	3	Toshihide KASHIMA (I...	2009-03-17	
E0-190-2008	Dynamic Soil Structure Interaction	2	Kenji MIURA (Hiroshi...	2009-05-13	
E1-030-2007	RC Structures III: Topic of the Recent Research on RC Structure	1	Masaomi TESHIGAWARA ...	2009-08-19	
E1-060-2009	Shaking Table Testing	1	Toshihide KASHIMA (I...	2009-12-11	
E1-110-2007	Dam Structures	1	Yoshikazu YAMAGUCHI ...	2009-03-13	
E1-140-2009	Earthquake Resistant Limit State Design I, II	3	Hiroshi AKIYAMA (Nih...	2010-05-25	
E1-180-2009	Design Earthquake Ground Motion and Seismic Force Ⅰ Ⅱ	2	Yuji ISHIYAMA (NewsT...	2009-12-22	
E1-200-2008	Structural Response Control	1	Satsuya SODA (Waseda...	2009-04-30	
E1-230-2009	Strong Earthquake Motion Observation I, II	2	Toshihide KASHIMA (I...	2010-01-08	

Web-site example

Master Thesis (Regular course)

Synopsis Database

- **2008 - 2009 Course**

Publication year and month: September, 2009

T	Author	Country	Supervisor	Title	PDF
	Wang Dun	China	Tatsuhiko HARA	ESTIMATION OF HIGH FREQUENCY ENERGY RADIATION (HFE ...	–
	LI Jinggang	China	Toshiaki YOKOI	ASSESSING THE APPLICABILITY OF L-SHAPE ARRAY FOR M ...	–
	Nelson Eduardo Ayala Leiva	El Salvador	Toshiaki YOKOI	STRONG GROUND MOTION SIMULATION OF THE JANUARY 13, ...	–
	Aderito Celso Felix Aramuge	Mozambique	Yushiro FUJII	TSUNAMI HAZARD ASSESSMENT IN MOZAMBIQUE COAST	–
S	PHYO Maung Maung	Myanmar	Bunichiro SHIBAZAKI	RELOCATION OF EARTHQUAKES IN MYANMAR BY MJHD METHO ...	–
	Ehsanullah	Pakistan	Harutaka SAKAI	PALEOSEISMIC ACTIVE FAULT STUDY IN KINKI TRIANGL ...	–
	Riaz Ahmed Soomro	Pakistan	Tatsuhiko HARA	RECEIVER FUNCTION ANALYSIS FOR CRUSTAL STRUCTURE B ...	–
	Poolcharuansin Kannika	Thailand	Tsuyoshi TAKADA	UPDATING FRAMEWORK FOR SITE-SPECIFIC ATTENUATION ...	–
	Ozmen Ozgur Tuna	Turkey	Hiroaki YAMANAKA	STUDY ON SITE EFFECTS USING STRONG MOTION DATA OF ...	

IISEE Website

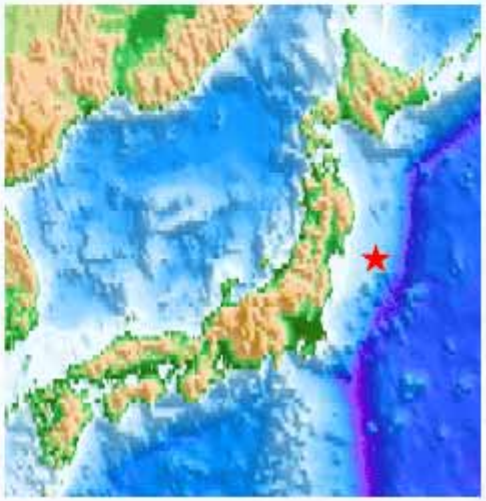
http://iisee.kenken.go.jp/special2/20110311tohoku.htm

The 2011 off the Pacific coast of Tohoku Earthquake on March 11, 2011

uploaded on March 12, 2011
updated on March 17, 2011
updated on June 27, 2011
updated on August 4, 2011
updated on August 24, 2011
updated on September 14, 2011
updated on September 20, 2011
[Japanese page]

Mainshock

- **Epicenter**: Off Sanriku, Japan
- **Origin time**: March 11, 2011 at 14:46 JST (JMA)
- **Location**: 38.103°N 142.860°E (JMA)
- **Depth**: 24 km (JMA)
- **Magnitude**: 9.0 (JMA)



Information in our site

Analysis

- Tsunami Simulation by Dr. Fujii
- Tsunami Waveform Inversion by Dr. Fujii
- Determination of earthquake magnitudes using duration of high-frequency energy radiation and maximum displacement amplitudes: application to the 2011 off the Pacific coast of Tohoku Earthquake

Opening view of the web site

IISEENET Information Network of Earthquake Disaster Prevention Technologies

INFORMATION NETWORK OF EARTHQUAKE DISASTER PREVENTION TECHNOLOGIES

Go to Japanese

- Welcome
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- Site Map
- Download
- Newsletter
- WWW Links
- World Map
- Country Index
- Members Area
- Seismic Design Code
- Seismic Network and Activity
- Seismic Damage
- Microzonation

Homepage EDES_B Earthqwake Damage Estimation System

What' New!

2006/05/12
EDES_B (Earthquake Damage Estimation System for Building) is uploaded. it's..

2006/04/06
Seismic Network: "Zimbabwe" is uploaded.

2006/04/06
Seismic Design Code: "China" is updated.

2006/03/31
Seismic Design Code: "Peru", Seismic Network (Seismicity and Tectonics): "PERU" are updated.

2006/03/29
Seismic Network: "Georgia" is updated.

2006/03/28
Seismic Design Code: "Afghanistan" is uploaded.

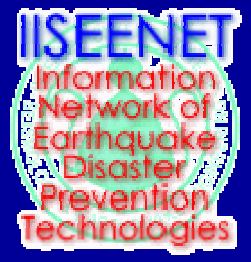
2005/11/22
Seismic Design Code: "Pakistan" is updated.

2005/11/01
"IISEE NEWSLETTER Vol.5 November, 2005" is added on Newsletter page.

2005/10/20
Seismic Design Code: "Pakistan" is added.

2005/09/13
Seismic Design Code: "India" is added.

Click http://iisee.kenken.go.jp/net



Information Network of Earthquake Disaster Prevention Technologies

The IISEE has conducted a research project entitled "*Information Network on Earthquake Disaster Prevention Technologies*" in 2000.4~2003.3.

This project aimed at accumulating and diffusing valuable technical information in order to contribute to disaster prevention efforts in earthquake-vulnerable countries.

This site is providing results of this three-year research project. The IISEE will keep improving this site by upgrading and expanding information database.

URL http://iisee.kenken.go.jp

Web-site example

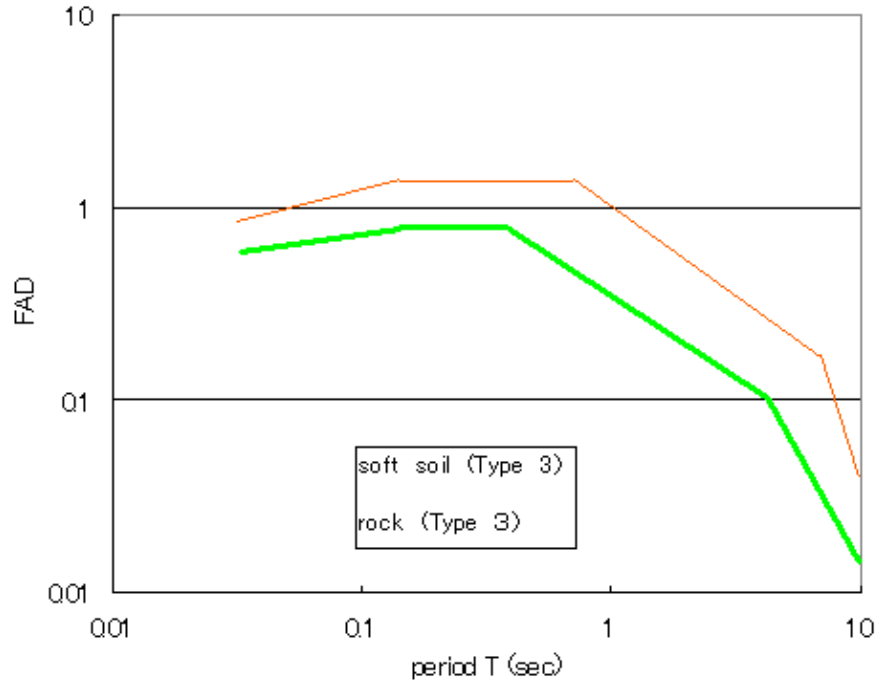
Seismic Design Code in Peru

- **Code Name** National Technical Standard NTE. E30 Earthquake Resistant Design (2003)

  National Building Code Technical Standard of Building E.030 Earthquake-Resistant Design (PDF File English Version)

  Issued by Ministry of Housing, Construction and Sanitation **Revision** The horizontal force or total shear force at the base due to earthquake shall be calculated by the following formula:

Dynamic amplification factor FAD



Web-site example

Seismic Network and Seismic Activity in Peru

(1) Seismic network

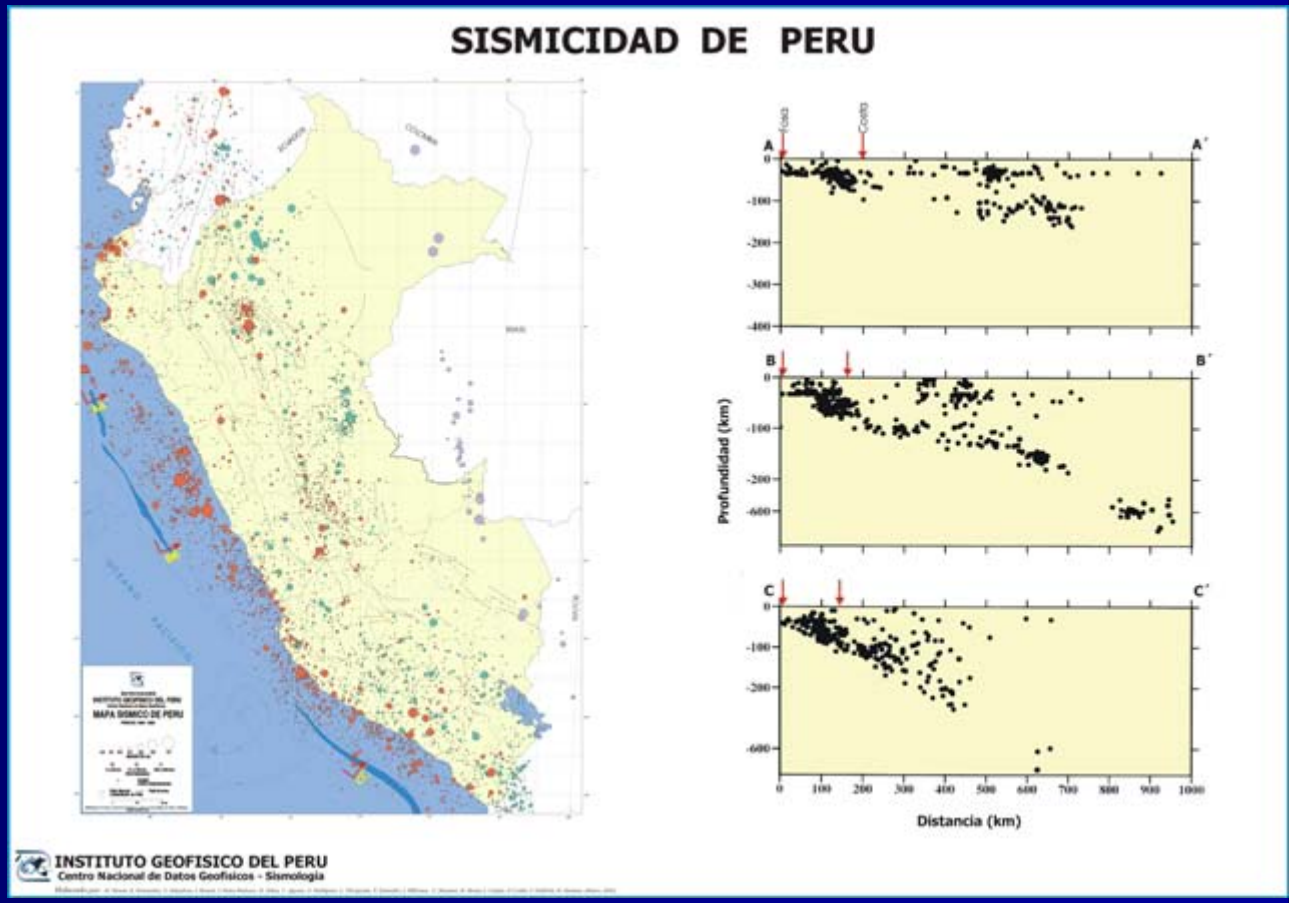
(2) Seismicity

(3) Tectonics

(4) Zonation

(5) Data source

(Country report)



JICA Projects

- IISEE supports all the BRI-JICA Projects Regarding Earthquake Disaster Mitigation.
- Many ex-participants play important roles in the projects.

International Platform for Reducing Earthquake Disasters (IPRED)

since 2007 by UNESCO

UNESCO-IPRED Database

The International Platform for Reducing Earthquake Diasters

La Platforme internationale pour la prévention des catastrophes sismiques

UNESCO-IPRED

The International Platform for Reducing Earthquake Diasters

La Platforme internationale pour la prévention des catastrophes sismiques

UNESCO has launched the IPRED programme in order to identify gaps and priorities through the sharing of scientific knowledge and experience in
and to support the development of political will and public awareness, for the purpose of ensuring the better preparation against earthquakes and bui
L'UNESCO a lancé le programme IPRED afin d'identifier les lacunes et les priorité grâce au partage de connaissances scientifiques et d'expériences
des tremblements de terre. Le but de ce programme est également de soutenir le développement de la volonté politique et de la sensibilisation du pul
tremblements de terre et de mettre en place une culture de sécurité pour les personnes dans le monde.

The creation and maintenance of this website are supported by the following Japanese organizations:

- *The Center for Better Living (CBL)*
- *The Building Center of Japan (BCJ)*
- *The Japan Building Disaster Prevention Association (JBDPA)*

The Latest News

- The IISEE invites ex-participants to contribute special articles celebrating the 50th anniversary of International Training in Seismology and Ear
- The IISEE has uploaded a special page on the Southern Qinghai, China Earthquake of 14 April 2010. (15 April 2010)
- The ISDR Global Task Force on Building Codes (GTFBC) has started uploading information on "Chinese seismic codes". (14 April 2010)
- The IISEE has uploaded a special page on the Sumatra Earthquake of 6 April 2010. (8 April 2010)
- The IPRED's plan of establishing a system for post-earthquake field investigations was introduced by a Japanese newspaper (website). (31 M
- The 19th Caribbean Geological Conferece will be held on 21-24 March 2011 in Guadeloupe, France. (31 March 2010)
- The GTFBC website is now linked with the Shelter Cluster Haiti 2010 Technical Working Groups (TWIGs). (30 March 2010)
- The Lecture Notes Archive is being updated. (IISEE Newsletter, 19 March 2010)
- The ISDR Global Task Force on Building Codes (GTFBC) has started uploading information on "Chilean seismic codes". (1 March 2010)
- The IISEE has uploaded a special page on the Chile Earthquake of 27 February 2010. (1 March 2010)
- The 2nd Arab Conference on Astronomy and Geophysics (ACAG-2) will be held on 25-28 October 2010 in Cairo, Egypt. This conference
  Research Institute of Astronomy and Geophysics (NRIAG). Please also check NRIAG website. (1 March 2010)
- The 7th Kazakhstan-Chinese International Symposium on "Earthquake Prediction, Seismic Hazard and Seismic Risk Assessment in Central A
  Kazakhstan. This conference is co-organized by the IPRED member, the Institute of Seismology. (26 February 2010)
- The IPRED Portal site were enhanced. (IISEE Newsletter, 10 February 2010)
- The Third Session of the IPRED will be held in Indonesia during the week of 5 July 2010. Please keep the dates! (19 February 2010)
- The IPRED members are actively participating in the "ISDR Global Task Force on Building Codes (GTFBC)" for the reconstruction of safer
- The IISEE has renewed the "IISEE-IPRED website" to promote IPRED activities. (3 February 2010)
- The UNESCO-IPRED will co-sponsor the ICTP Conference (ICTP website) to be held on 10-14 May 2010 in Trieste, Italy. (25 January 2
- The IISEE has uploaded a special page on the Haiti Earthquake of 12 February 2010. (14 January 2010)

Kickoff Meeting in Tokyo, June 2007

IPRED Action Plan (revised draft) on 8-10 July 2008

- Action 1: Development of database to contribute to field investigations (database related to anti-seismic performance, etc.)
- Action 2: Establishment of a system for post-earthquake field investigations
- Action 3: Development of educational materials database (for the e-learning system, etc.)
- Action 4: Promotion of international joint research programmes
- Action 5: Promotion of international cooperation with universities
- Action 6: Promotion of sharing engineering data on structural testing, soil properties, etc.
- Action 7: Promotion of ground motion observation network and the data sharing
- Action 8: Training of trainers through the IISEE follow-up trainings, follow-up workshops, etc.
- Action 9: Development of the portal website
- Action 10: Establishment of the “IISEE-UNESCO Lecture Notes Series”
- Action 11: Development of the microtremor array exploration techniques
- Action 12: Dissemination of activities through International/regional events related to seismology or earthquake engineering
- Action 13: Planning of international workshops to raise IPRED’s awareness
- Action 14: Information dissemination by distribution of printed materials
- Action 15: Translation of building codes into other languages