



# HAZARDS 2000

Eighth International Symposium on Natural and Technological Hazards

## Second Bulletin



LINKS



MAY 21-25, 2000  
TOKUSHIMA, SHIKOKU  
JAPAN

## Theme

**Disasters - How do we mitigate them?**

### Organized by

- \* The International Society for the Prevention and Mitigation of Natural Hazards
- \* The Tsunami Society

### Supported by

- \* DRS, DPRI, Kyoto University
- \* Tokushima University
- \* Tokushima Bunri University
- \* Japan Society for Natural Disaster Science
- \* Institute of Social Safety Science
- \* Japan Society of Disaster Information
- \* Tokushima Prefecture
- \* Tokushima City

### International Scientific Committee

- \* Prof. Russell Blong, Macquarie University, Australia (NHS President)
- \* Prof. Yoshiaki Kawata, Kyoto University, Japan
- \* Prof. Hitoshi Murakami, University of Tokushima, Japan
- \* Dr. Swaroop Reddy, NHS Treasurer, U.S.A.
- \* Dr. S. Venkatesh, Atmospheric Environment Service, Canada

<p><b><u>Local Organizing Committee</u></b></p>	<ul style="list-style-type: none"> <li>* Prof. Yoshiaki Kawata, Kyoto University (Chair, NHS Vice President)</li> <li>* Prof. Hitoshi Murakami, University of Tokushima</li> <li>* Prof. Kaoru Takara, Kyoto University</li> <li>* Prof. Tadanobu Sato, Kyoto University</li> <li>* Prof. Haruo Hayashi, Kyoto University</li> <li>* Prof. Takeyoshi Tanaka, Kyoto University</li> <li>* Prof. Fumio Yamazaki, University of Tokyo</li> <li>* Prof. Fumihiko Imamura, Tohoku University</li> <li>* Prof. Mitsuo Kawatani, Kobe University</li> <li>* Prof. Ken-ichi Kusachi, Himeji Institute of Technology</li> <li>* Prof. Yasunori Kozuki, University of Tokushima</li> <li>* Mr. Mitsutaka Terui, Tokushima Prefecture</li> <li>* Mr. Yoshiaki Shimada, Tokushima Prefecture</li> <li>* Mr. Katsuhide Yamaguchi, Tokushima City</li> </ul>
<p><b><u>Background</u></b></p>	<p>This International Symposium is the eighth in the continuing inter-disciplinary series begun in 1982. The Seventh Symposium was held in Chania, Crete Is., Greece in May 1998 and was attended by participants from over 25 countries around the world. The objectives of this series of symposia on Natural and Technological Hazards are to promote the advancement of hazard sciences, to perceive and explore those aspects that may be similar among some of the various hazards, to review the latest developments in several selected fields and to outline new directions for future research.</p>
<p><b><u>Symposium Theme</u></b></p>	<p>Achieving the objectives of the symposia has taken on a new sense of urgency as a result of the large number of natural and technological disasters that have already occurred in various parts of the world in the 1990's, the UN's International Decade for Natural Disaster Reduction. The list is long and includes among others, volcanic eruptions in the Philippines, storm surge related flooding in Bangladesh, oil spills and forest fires resulting from the Middle East conflict, floods in China, North America and Europe caused by heavy rains, earthquakes and tsunamis in Papua New Guinea, Japan and Columbia, hurricane damage in North and Central America. The human reaction and response to these disasters has varied widely from one disaster to the next.</p> <p>In view of these disasters the theme for HAZARDS 2000 is:  <b>Natural Disasters - How do we mitigate them?</b></p> <p>The Symposium organizing committee invites papers specifically related to the scientific, social, economic and political aspects of this theme with particular emphasis on case studies from recent major disasters. Other papers on natural and technological disasters will also be considered.</p> <p>With participants from many countries around the world, HAZARDS 2000 will be an excellent forum for exchange of knowledge and ideas on the subject of natural and technological disasters. This international symposium will be of interest to researchers, policy makers, disaster mitigation personnel and the insurance industry.</p>
<p><b><u>Topics</u></b></p>	<ul style="list-style-type: none"> <li>* Geological hazards (earthquakes, volcanic eruptions, landslide, soil erosion, etc.)</li> <li>* Meteorological hazards (hurricanes, typhoons, cyclones, droughts, desertification, etc.)</li> <li>* Hydrological and Marine hazards (tsunamis, storm surges, floods, sea level rise, marine biological hazards, etc.)</li> <li>* Technological hazards (air and water pollution)</li> <li>* Disaster prevention, mitigation and management</li> <li>* Economic, social and political aspects</li> <li>* Public education and preparedness</li> <li>* Adaptation and risk assessment</li> <li>* Insurance</li> <li>* Disaster information</li> <li>* NGO, NPO and Volunteer</li> <li>* Nankai earthquake and tsunami</li> <li>* Pan-Pacific tsunami problem</li> <li>* The IDNDR: A vehicle for action?</li> </ul>

The Symposium Program on the above topics will include keynote speakers, special invited talks and contributed papers.

**Secretariat**

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**Venue for the Symposium**

The HAZARDS 2000 Symposium will be held at the Asty Tokushima and the Tokushima Bunri University. They are located in the suburb of Tokushima City. You can know their locations in [this map](#). The city bus services is very convenient to reach Asty Tokushima and Tokushima Bunri University.

**Tokushima City Bus Time Table**

**From Tokushima Station (at No.3 stop) to ASTY Tokushima and BUNRI University**

08:15 To ASTY Tokushima Bus Stop

08:15 To BUNRI University Bus Stop

08:25 To BUNRI University Bus Stop

08:45 To BUNRI University Bus Stop

09:05 To ASTY Tokushima Bus Stop

09:20 To BUNRI University Bus Stop

09:40 To ASTY Tokushima Bus Stop

09:50 To ASTY Tokushima Bus Stop

10:00 To BUNRI University Bus Stop

10:25 To ASTY Tokushima Bus Stop

10:40 To ASTY Tokushima Bus Stop

**From ASTY Tokushima to Tokushima Station**

16:35

16:55

17:00

17:15

17:45

18:10

Note: Approximately, it takes around 20 minutes. It costs 200 yen.

Please note that the welcome reception will be held at the Tokushima Prince Hotel and the symposium banquet will be held at the Awakanko Hotel.

Addresses:

Asty Tokushima	1 Higashi-hamaboji, Yamashiro-cho, Tokushima 770-8055
Tokushima Bunri University	180 Nishi-hamaboji, Yamashiro-cho, Tokushima 770-8514
Tokushima Prince Hotel	3-5-1, Mandai-cho, Tokushima 770-0941 (TEL: +81-88-624-1111, FAX: +81-88-624-2375)
Awakanko Hotel	3-16-3, Ichiban-cho, Tokushima 770-0833 (TEL: +81-88-622-5161, FAX: +81-88-622-2857)

### Program

### HAZARDS 2000 PROGRAM

date	morning	afternoon	evening
May 21-Sunday			Welcom Reception
			18:00-19:30 at Prince Hotel
May 22-Monday	Opening Ceremony	Open Forum <i>(Language: Japanese)</i>	
	9:00-9:45 at Tokushima Bunri University	13:00~16:40 at Tokushima Bunri University	
	<a href="#">Plenary Session:keynote lecture</a>		
	9:45-11:30 at Tokushima Bunri University		
May 23-Tuesday	Special Session (Room D)	Parallel Sessions (Room A, B and C)	
	9:30-11:30 at ASTY Tokushima	13:00-17:20 at ASTY Tokushima	
May 24-Wednesday	Parallel Sessions (Room A, B and C)	Parallel Sessions (Room A, B and C)	Symposium Dinner
	9:30-11:30 at ASTY Tokushima	13:00-17:20 at ASTY Tokushima	19:00~ at Awakanko Hotel
May 25-Thursday	Technical Visit		
	8:00~17:00 Memorial Spots of Tsunami Disaster in Tokushima		

<b><u>Plenary Session: keynote lecture</u></b>	Title: Protection of Cultural Heritages from Post Earthquake Fires			
	Kenzo Toki Professor, Graduate School of Civil Engineering, Kyoto University, JAPAN			
	Title: Disaster Mitigation - the next ten years			
Russell Blong President, Natural Hazards Society & Professor Natural Hazards Research Centre, Macquarie University, AUSTRALIA				
<b><u>Language</u></b>	The language of the Symposium will be English except the Open Forum. Because the Open Forum will be opened to local citizens, the language will be Japanese.			
<b><u>Presentation</u></b>	Time	20 minutes (including discussion)		
	Equipment	Overhead projector Film slide projector Video projector		
	Note	Video projector can be used with Macintosh and PC. However, any computers will be not prepared. Please use your own computer. Video player will not be prepared also.		
<b><u>Post Symposium Publication of Papers</u></b>	The Symposium participants are encouraged to submit their papers for publication at the regular issues of the journal "Natural Hazards" which is published by Kluwer Academic Publisheres of the International Society for the Prevention and Mitigation of Natural Hazards. The Organizing Committee examines also the possibility for accepting selected papers from the Symposium to be peer-reviewed and published in the book series "Recent Advances in Natural and Technological Hazards Research". This book series is published by Kluwer Academic Publishers.			
<b><u>Registration Fees</u></b>			NHS members	All Others
	Symposium Participants	Before April 1,2000	30,000yen	33,000yen
		After April 1,2000 or On-Site	33,000yen	36,000yen
	Accompanying Persons		10,000yen	11,000yen
	"Symposium Participant" registration fees include: * Welcome reception (May 21) * Symposium banquet (May 24) * Symposium Program * Book of Abstracts and other symposium documents * Attendance at all scientific sessions * Inter-session coffee breaks * A symposium organized technical visit  "Accompanying Persons" registration fees include: * Welcome reception (May 21) * Symposium banquet (May 24) * Symposium Program * A symposium organized technical visit  Please return completed <a href="#">Registration Form</a> to <a href="#">Hazards 2000 Secretariat</a> .			
<b><u>Currency</u></b>	Yen is the national currency in Japan. Please refer <a href="#">this web site</a> to know the rate.			

**Travel Agent**

The official travel agent of the Hazards 2000 is:

Air Travel Tokushima, Inc.  
1-6 Saiwai-cho, Tokushima 770-0847, Japan  
Tel: +81-88-625-5551  
Fax: +81-88-653-2344  
E-mail: [project@air-travel.co.jp](mailto:project@air-travel.co.jp)

Note: Please designate that you will participate with Hazards 2000.

**How to Reach Tokushima City**

Tokushima City can be reached from most international airport via [the Kansai International Airport](#). The rimousine bus is very convenient from the airport to Tokushima. The bus time table and the fare are here. You can get more information from [this page](#). And you can ask [the official travel agent](#) about transportation concerned with Hazards 2000.

For Tokushima		For Kansai International Airport	
Kansai International Airport	Tokushima Station	Tokushima Station	Kansai International Airport
6:10	8:50	5:00	7:40
7:10	9:50	5:40	8:20
8:35	11:15	6:20	9:00
9:35	12:15	7:00	9:40
11:10	13:50	8:00	10:40
12:10	14:50	9:20	12:00
14:10	16:50	10:20	13:00
15:10	17:50	11:20	14:00
16:10	18:50	13:00	15:40
17:10	19:50	14:00	16:40
18:10	20:50	15:20	18:00
19:10	21:50	16:20	19:00
20:10	22:50	18:20	21:00
21:20	24:00	19:20	22:00
4,000 yen (Adult)		2,000 yen (Child)	160 minutes

**Weather Conditions**

The meteorological data in Tokushima are given below:

		May	June
Atmospheric temperature	Average	18.6 C	22.1 C
	Maximum	23.0 C	25.8 C
	Minimum	14.5 C	18.9 C
Average number of sunny hours per day		6.19	4.93
Relative humidity		70%	76%

**Hotel  
Accommodation**

Blocks of rooms have been reserved of the following hotels. You can know their locations in [this map](#). Please get on to [the official travel agent](#) and make a reservation.

**Tokushima Prince Hotel**

(3-5-1,Mandai-cho,Tokushima-shi,Tokushima,Japan 770-0941)

TEL: 081-88-624-1111 FAX: 081-88-624-2375

RATE: Single 9,000 yen Twin single use 12,000 yen

INTERNET: Possible

ACCESS: 20 min. from Tokushima Station on foot

10 min. from Tokushima Station by car

25 min. from main hall on foot

15 min. from main hall by car

**Hotel Clement Tokushima**

(61,Nishi-1-chome,Terashimahoncho,Tokushima-shi,Tokushima,Japan 770-0831)

TEL: 081-88-656-3111 FAX: 088-656-3132

RATE: Single 9,500 yen

INTERNET: Possible

ACCESS: 1 min. from Tokushima Station on foot

35 min. from main hall on foot

20 min. from main hall by car

**Awakanko Hotel**

(3-16-3,Ichiban-cho,Tokushima-shi,Tokushima,Japan 770-0833)

TEL: 088-622-5161 FAX: 088-622-2857

RATE: Single 9,500 yen Twin 9,000 yen Double single use 13,000 yen

INTERNET: Possible

ACCESS: 10 min. from Tokushima Station on foot

5 min. from Tokushima Station by car

35 min. from main hall on foot

20 min. from main hall by car

**Tokushima Park Hotel**

(32-1,2-chome,Tokushima-cho,Tokushima-shi,Tokushima,Japan 770-0852)

TEL: 088-625-3311 FAX: 088-625-3319

RATE: Single 9,000 yen Twin 8,000 yen Twin single use 12,000 yen

INTERNET: Possible

ACCESS: 10 min. from Tokushima Station on foot

5 min. from Tokushima Station by car

25 min. from main hall on foot

15 min. from main hall by car

**Century Plaza Hotel**

(1-46-1,Minamishouwa-cho,Tokushima-shi,Tokushima,Japan 770-0944)

TEL: 088-655-3333 FAX: 088-655-2190

RATE: Single 9,500 yen

INTERNET: Impossible

ACCESS: 30 min. from Tokushima Station on foot

20 min. from Tokushima Station on foot

10 min. from main hall on foot

5 min. from main hall by car

**Hotel Marston Green**

(1-12,Ryogokuhoncho,Tokushima-shi,Tokushima,Japan 770-0843)

TEL: 088-654-1777 FAX: 088-652-8104

RATE: Single 9,000 yen



INTERNET: Impossible

ACCESS: 10 min. from Tokushima Station on foot

5 min. from Tokushima Station by car

25 min. from main hall on foot

15 min. from main hall by car

Hotel Sunshine Tokushima Annex

(2-7-1,Minamidekijima-cho,Tokushima-shi,Tokushima,Japan 770-0824)

TEL: 088-622-2333 FAX: 088-622-5253

RATE: Single 9,000 yen Twin 8,500 yen

INTERNET: Impossible

ACCESS: 10 min. from Tokushima Station on foot

5 min. from Tokushima Station by car

35 min. from main hall on foot

20 min. from main hall by car

Hotel Sunshine Tokushima

(2-7-1,Minamidekijima-cho,Tokushima-shi,Tokushima,Japan 770-0824)

TEL: 088-622-2333 FAX: 088-622-5253

RATE: Single 8,000 yen Twin 7,500 yen

INTERNET: Impossible

ACCESS: 10 min. from Tokushima Station on foot

5 min. from Tokushima Station by car

35 min. from main hall on foot

20 min. from main hall by car

Alpha Hotel Tokushima

(11,2-chome,Higashidaikumachi,Tokushima-shi,Tokushima,Japan 770-0905)

TEL: 088-655-0222 FAX: 088-655-0606

RATE: Single 9,050 yen

INTERNET: Impossible

ACCESS: 10 min. from Tokushima Station on foot

5 min. from Tokushima Station by car

25 min. from main hall on foot

15 min. from main hall by car

Tokushima Washington Hotel Plaza

(61,1-chome,Oomichi,Tokushima-shi,Tokushima,Japan 770-0923)

TEL: 088-653-7111 FAX: 088-654-3111

RATE: Single 9,900 yen

REMARKS: Two days (21 and 22 May) only

INTERNET: Impossible

ACCESS: 10 min. from Tokushima Station on foot

8 min. from Tokushima Station by car

20 min. from main hall on foot

10 min. from main hall by car

Tokushima Tokyu Inn

(24,1-chome,Motomachi,Tokushima-shi,Tokushima,Japan 770-0834)

TEL: 088-656-0109 FAX: 088-626-0686

RATE: Single 8,500 yen


REMARKS: Two days (21 and 22 May) only

INTERNET: Possible


ACCESS: 3 min. from Tokushima Station on foot

35 min. from main hall on foot



		<p>20 min. from main hall by car</p> <p>NOTE: RATE includes Service Charge and Breakfast, and excludes Tax. Please reconfirm the rate when you make a reservation.</p> <p>NOTE: "Possible" of INTERNET means that you can get access to the Internet, if you have YOUR OWN computer and ID of ISP (Internet service provider). The hotels can NOT provide any computers and IDs for you.</p>
	<p><b><u>Technical Tour</u></b></p>	<p>The following four tours will be prepared. Maximum passengers in each tour is 40. You can make an entry at the reception desk.</p> <p>Date: Thursday, 25<sup>th</sup> May 2000  Destination: Asakawa, Kainan Town, a tsunami-damaged area.</p> <p>On Thursday the 25<sup>th</sup> of May at 8a.m, 4 buses will depart from Tokushima Station to take you to visit Asakawa, Kainan Town, an area in the south of Tokushima Prefecture that has been afflicted by a number of tsunamis. You will be divided into 4 groups, A - D, as described below. After observing the area that was damaged we will return to Tokushima City. On the way we will also visit the following well-known facilities: 'Caretta'- the sea turtle museum in Hiwasa Town / 'Mollusc Mugi'- a shell museum in Mugi Town, 'Kainan-cho Bunka Mura'- cultural facilities in Kainan Town, 'Maze-no-oka' - outdoor recreation facilities in Kainan Town, and the Tokushima City 'Awa Odori Kaikan'. We plan to finish the day's activities at approximately 5p.m. Asakawa, the area we will be observing, is located at the center of a V-shaped bay, typical of tsunami-susceptible areas, and as such has suffered several devastating tsunamis in the past. In the earthquake and tsunami that occurred on December 21 1946 on the Kansai Pacific Coast area, the Tokushima coastal area suffered the most fatalities, with 85 people losing their lives.</p> <p>The Kainan Town local authorities have developed comprehensive measures in order to prepare for the event of another such disaster. These include establishing an evacuation center, attaching a devise to street lights to ensure they will not go out in a power cut, introducing a disaster crew assembly system and an emergency warning system, holding evacuation drills, and producing a disaster prevention elementary school supplementary reading book. Additionally, tsunami breakwater walls have been constructed along the coast throughout Tokushima Prefecture.</p> <p>A-group: Tokushima Station == Caretta == Kainan Town == Awa Odori Kaikan  B-group: Tokushima Station == Mollusc == Kainan Town == Awa Odori Kaikan  C-group: Tokushima Station == Kainan Town ==Caretta == Awa Odori Kaikan  D-group: Tokushima Station == Kainan Town == Mollusc == Awa Odori Kaikan</p> <p>* Caretta: a sea turtle museum in Hiwasa Town. This picturesque area is famous for the sea turtles that come to lay their eggs here.  * Mollusc Mugi: a shell museum in Mugi Town that features Japan's only display of all three of the Japanese 'Three Rare Treasures'.</p>
		

## Session Program

		Room A	Room B	Room C
Tuesday 23rd, May	9:30 - 11:30	<u>Special session</u>  Room D	-	-
	13:00 - 15:00	<u>(Session A-1)</u> Geological hazards	<u>(Session B-1)</u> Public education and preparedness	<u>(Session C-1)</u> Disaster prevention, mitigation and management
	15:20 - 17:20	<u>(Session A-2)</u> Geological hazards	<u>(Session B-2)</u> Meteorological hazards & Pan-Pacific tsunami problem	<u>(Session C-2)</u> Disaster prevention, mitigation and management
Wednesday 24th, May	9:30 - 11:30	<u>(Session A-3)</u> Geological hazards	<u>(Session B-3)</u> Nankai earthquake and tsunami & Hydrological and Marine hazards	-
	13:00 - 15:00	<u>(Session A-4)</u> Geological hazards	<u>(Session B-4)</u> Hydrological and Marine hazards	<u>(Session C-4)</u> Disaster information
	15:20 - 17:20	<u>(Session A-5)</u> Economic, social and political aspects	<u>(Session B-5)</u> Hydrological and Marine hazards & Disaster prevention, mitigation and management	<u>(Session C-5)</u> Disaster information

## Presentation List

### Special session

#### MEASURES FOR COPING WITH NATURAL DISASTERS IN KOREA

Jaiwoo Song

#### MAJOR SIMULATION EFFORT FOR EARTHQUAKE ENGINEERING IN THE UNITED STATES, AND GLOBAL CONSIDERATIONS FOR NATURAL ENVIRONMENTAL HAZARDS

Harry Yeh

#### TSUNAMIS IN EAST MEDITERRANEAN: A REVIEW

Gerassimos Papadopoulos

#### AUGUST 1999 EARTHQUAKE, IZMIT BAY AND TSUNAMI RISK IN THE SEA OF MARMARA

Cevdet Ahmet Yalciner

### A-1

#### STRONG MOTION SIMULATION FOR THE PHILIPPINES BASED ON SEISMIC HAZARD ASSESSMENT

Riberto F. Torregosa Masata Sugito Nobuoto Nojima

#### EARTHQUAKE PREDICTABILITY USING CHAOTIC DYNAMICS

H.N. Srivastave S.N. Bhattacharya

#### EXPANSION OF THE NISHINOMIYA BUILT ENVIRONMENT DATABASE

Kohiyama Masayuki Hengjian Lu Maki Norio Tanaka Satoshi Yamashita Norihiko  
Sato Tadanobu Hayashi Haruo

#### NEW PROBABILISTIC SEISMIC HAZARD ANALYSIS FOR VRANCEA (ROMANIA) SEISMOGENIC ZONE

Paivi Mantyniemi Vasile Marza Andrzej Kijko Paul Retief

#### COMPARISON BETWEEN TWO SYSTEMS OF BASE SEISMIC INSULATION

Federico Bartolozzi

#### SELF-CENTRING ASEISMIC SYSTEM WITH DOUBLE NATURAL FREQUENCY

Federico Bartolozzi

### A-2

#### SELF-CENTRING ASEISMIC SYSTEM WITH ELASTIC BEARINGS AND HYDRAULIC DAMPERS

Federico Bartolozzi

#### ASEISMIC HYDRAULIC BEARING

Federico Bartolozzi

#### FORECAST OF CATASTROPHIC EARTHQUAKES USING SATELLITE MONITORING OF LOW-FREQUENCY EMISSIONS AND OTHER PARAMETERS OF A NEAR-EARTH SPACE PLASMA

V.I. Larkina

#### FAILURE MECHANISM OF DAIKAI SUBWAY STATION DURING HYOGOKEN-NAMBU EARTHQUAKE

Ma Xianfeng Akitoshi Mochizuki Yang Linde

#### SEISMIC ATTENUATION AND SOURCE PARAMETERS FROM SHALLOW EARTHQUAKES IN THE CRUST OF WAKAYAMA, SOUTHWEST JAPAN

Matsunami Koji Nakamura Masao Seto Norihiko

### A-3

#### SOIL CONDITION AND SEISMIC CHARACTERISTICS IN SHIGA PREFECTURE, JAPAN

Teizo Fujiwara Kazumasa Fukumoto Koji Matsunami Masami Kobayashi Takashi Morii

#### CHAMOLI EARTHQUAKE (INDIA) OF MARCH, 1999 AND ITS AFTERSHOCKS

H.N. Srivastave S.N. Bhattacharya

#### AIR POLLUTION AFTER HANSHIN-AWAJI EARTHQUAKE DISASTER AND FOLLOW-UP OF HUMAN INFLUENCE DUE TO HEALTH QUESTIONNAIRE

Gotoh Takao Nakata Minori

#### EARTHQUAKES TRIGGERING OTHER EARTHQUAKES

G. A. Papadopoulos

#### SATELLITE MONITORING OF IONOSPHERIC FORERUNNERS OF EARTHQUAKES BY RADIO-PHYSICAL AND RADIO-ENGINEERING METHODS

N.N. Efimov V.I. Larkina

#### CORRELATION BETWEEN STRUCTURAL DAMAGES AND TOPOGRAPHICAL & GEOLOGICAL FEATURES OF THE DISASTER AREA OF QUINDIO, COLUMBIA EARTHQUAKE 1999

Hashimoto Takao Miyajima Masakatsu

#### A-4

#### A COMPARISON OF SITE-RESPONSE ESTIMATION BY DIFFERENT METHODS USING STRONG MOTION RECORDS IN TANGSHAN, CHINA

Matsunami Koji Zhang Wenbo

#### HORIZONTAL STRENGTHS AND DYNAMIC CHARACTERISTICS OF A EXISTING WOODEN FRAME HOUSE WITH THATCHED ROOF

Fukumoto Kazumasa Fujiwara Teizo Kobayashi Masami

#### STRUCTURAL AND APPLIED GEOPHYSICS FOR THE SAFEGUARD OF HISTORICAL AND ARCHAEOLOGICAL SITES IN ACTIVE VOLCANIC AREAS. THE MOUNT VESUVIUS CASE-HISTORY

Domenico Patella Paolo Mauriello

#### LANDSLIDES TRIGGERED BY THE JULY-AUGUST 1999 HEAVY RAIN IN KOREA

Dugkeun Park

#### SOIL EROSION IN BANGLADESH

Mowdood-ur Rasheed

#### TREMENDOUS HAZARDS OF LANDSLIDES CAUSED BY EUTROPHICATION OF HILLSIDE ECOSYSTEMS -- BIODEGRADATION OF SLOPES

Tanehiro Futagami Sigenori Shima Kazuhito Kaibara Keiichiro Okiyama Hiroshi Yohiguni

#### A-5

#### ECONOMIC ASSESSMENT OF EARTHQUAKE PROTECTION PROGRAMME THROUGH RETROFITTING OF NON ENGINEERED BUILDINGS

Amit Kumar Pratima Rani Bose

#### TOWARDS OPTIMAL RISK DISTRIBUTION

Dany Liechti Erik Ruettener Stephan Eugster

#### TOTAL-QUALITY-MANAGEMENT-BASED ASSESSMENT OF KOBE CITY'S LIFE RECOVERY ASSISTANCE PROGRAMS FOR VICTIMS OF THE 1995 KOBE EARTHQUAKE

Shigeo Tatsuki Haruo Hayashi

#### PATTERNS OF PSYCHOSOCIAL COPING AND ADAPTATION AMONG RIVERBANK EROSION-INDUCED DISPLACEES IN BANGLADESH: IMPLICATIONS FOR DEVELOPMENT PROGRAMMING

David Hutton

#### A STUDY ON THE SOCIAL AND ECONOMICAL ASPECTS OF THE NATURAL HAZARD LOSSES IN COMPARISON WITH THE ARTIFICIAL ACCIDENTS IN JAPAN

Hidemori Narahashi

#### RECOVERY PROCESS OF THE SOCIAL FLOWS AND STOCKS FROM DISASTER IN FOUNDATION AREA - AITAPE TSUNAMI DISASTER ON 17 JULY 1998, PAPUA NEW GUINEA-

Maki Norio Hayashi Isao Hayashi Haruo

#### B-1

#### BUILDING COMMUNITY PARTICIPATION IN DISASTER MANAGEMENT: LESSONS LEARNED FROM PAST EARTHQUAKES AND SUGGESTIONS FOR THE FUTURE

N.A	Karanci		B	Aksit					
PROPOSAL ON EARTHQUAKE EDUCATOINAL PROGRAMMES FOR INDIA AND NEIGHBOURING COUNTRIES									
H.N.	Srivastave								
ANALYSIS ON IMPORTANCE OF EARTHQUAKE EDUCATION FOR DISASTER REDUCTION (COMPARISON OF SEVERAL QUESTIONNAIRE SURVEYS ON AFFECTED AREA)									
Tomohiro	Kimura	Kiyomichi	Aoyama						
THE INTERNET AS AN INFORMATION COMMUNICATION MEDIUM FOR WEATHER-RELATED HAZARDS IN THE UNITED STATES									
Susan M.	Macey								
DEVELOPING PUBLIC AWARENESS ON IMPACT OF EARTHQUAKE									
Suprihadi	Bambang	Murjaya	Jaya						
B-2									
COMPARISON OF HAIL CHARACTERISTICS IN WESTERN PART OF PROTECTED AREA IN TWO SEPARATE PERIODS									
Damir	Po_akal								
HURRICANE FLOYD ALONG THE US COAST - OBSERVATIONS OF DAMAGES AND LESSONS LEARNED									
Atul C.	Khanduri	Gilbert	Molas						
ASSESSMENT AND MANAGEMENT OF AGRICULTURAL DROUGHT IN RAINFED RICE ECOSYSTEM OF CHHATTISGARH REGION IN CENTRAL INDIA									
A.S.R.A.S.	Sastri	J.S.	Urkurkar	Diwakar	Naibu	S.K.	Shrivastava		
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Hashimoto	Takao	Kimura	Tomohiro						
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Nobuaki	Koike	Yoshiaki	Kawata						
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Takuji	Sugimoto	Hitoshi	Murakami	Yasunori	Kozuki	Tomio	Shimada	Koji	Nishikawa
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Yeh	Harry	Kato	Norifumi	Sato	Shinji				
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Hideo	Matsutomi	Tatsuya	Ohmukai	Takuya	Hozumi				

LE Kentang									
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Masayuki Ishii	Taro Oka							
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T. Kishii	M. Hayano	Y Kuzuha	H Ogata		
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Hideki	Kurita	Masaaki	Nishioka	Tohru	Kanda	Michio	Hashino		
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# THEORETICAL STUDY ON BEACH PROCESSES IN HORIZONTALLY TWO DIMENSIONAL WAVE FIELD

Kawata	Yoshiaki	Kimura	Akihiro						
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Im Sang	Oh	Il-Ju	Moon	Yong-Hoon	Youn				
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Jaehyun	Shim	Jongseol	Lee	Yuntae	Kim	Jaiwoo	Song		
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Horie	Kei	Maki	Norio	Kohiyama	Masayuki	Hengjian	Lu	Tanaka	Satoshi
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Hengjian	Lu	Kohiyama	Masayuki	Horie	Kei	Maki	Norio	Hayashi	Haruo
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Takeda	Joe	Tamura	Keiko	Tatsuki	Shigeo				
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C. Emdad	Haque	Swaroop	Reddy						
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MD. Rashed Chowdhury									
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Syozo	Kubo	Hiromichi	Akimoto	Takumi	Moriwake				
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Terumoto	Kiyomine	Toshio	Mochizuki						
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Swaroop D.	Reddy	C. Emdad	Haque	Ben	Wisner				
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## A FEMINIST APPROACH TO DISASTERS: HOW CAN VULNERABILITY ANALYSIS BE INTERGRATED WITHIN THE CONCEPT OF "SUSTAINABLE HAZARDS MITIGATION"?

Etsuko Ohara(Yasui)

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Ennio Ferrani

Iovine Giulio

Olga Petrucci

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Fujiwara Teizo

Fukumoto Kazumasa

Kobayashi Masami

Morii Takeshi

Wakabayashi Isao

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Ushiyama Motoyuki

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Oya Masahiko

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Unohana Masataka

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Kawata Yoshiaki

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F Imamura

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Takaharu Kiriya

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Hayashi Haruo

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Hayashi Haruo

Takashima Masanori

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Kohiyama Masayuki

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