

International Workshop

Strong Ground Motion Prediction and Earthquake Tectonics in Urban Areas

Program and Abstracts

June 21-22, 2004

at Earthquake Research Institute, University of Tokyo, Japan

Hosted by ERI, Univ. Tokyo; DPRI, Kyoto Univ. and NIED
Sponsored by Ministry of Education, Culture, Sports, Science and
Technology of Japan (MEXT)

Workshop Program June 21~22, 2004

June 21AM

10:00-10:10 Teruo Yamashita (Director of ERI)

Opening Remarks

10:10-10:20 Yoshichika Nishio (Earthquake Research Chief of MEXT)

Greetings from MEXT

Studies in Pacific Region 1

10:20-10:50 Naoshi Hirata (ERI, Univ. Tokyo) 1

Overview of the Metropolitan Project: Regional characterization of the crust in metropolitan area for prediction of strong motion

10:50-11:20 David A. Okaya (Univ. Southern California, USA) 3

Earthquake science in southern California: The Southern California Earthquake Center (SCEC-2)

11:20-11:50 Kuo-Liang Wen (National Central Univ., Taiwan) et al. 7

Strong ground responses in the Taipei urban area

11:50-12:10 Sumio Sawada (DPRI, Kyoto Univ.) 17

Brief introduction of Project III-3 “Development of simulation system and its applications for catastrophic earthquake and tsunami disaster response in mega-cities facing the Pacific”: In terms of strong motion prediction for the Tonankai and Nankai earthquake

12:10-12:30 Kazuyoshi Kudo (ERI, Univ. Tokyo) 25

Concept and design of strong-motion database: A preparatory step for specifying input motion to the E-defense (3-D shaking table)

June 21 PM

Earthquake Source Modeling 1

14:00-14:30 P. Martin Mai (ETH, Switzerland) at al. 29

Merging dynamic rupture modeling and strong motion prediction

14:30-14:50 Satoshi Ide (Dep. Earth Planet. Sci., Univ. Tokyo) 33

Scaling of fracture energy and earthquake dynamic rupture modeling

14:50-15:10 Tomotaka Iwata and Kimiyuki Asano (DPRI, Kyoto Univ.) 37

Modeling of source and basin structures for strong ground motion prediction

15:10-15:30 James J. Mori and Ahji Kim (DPRI, Kyoto Univ.) 41

Scaling of radiated energy for intermediate depth earthquakes

15:30-15:50 Katsuhisa Kanda and Masayuki Takemura (Kobori Res. Complex) 43

Inversion analysis of historical interplate earthquakes using seismic intensity data

break (20 min.)

Site and Path Effects

16:10-16:40	Ralph J. Archuleta (Univ. California, Santa Barbara) et al.	51
	Predictability of site effects: Use of the Yokohama high-density seismic network	
16:40-17:10	Tso-Chien Pan (Nanyang Tech. Univ., Singapore) et al.	55
	Site dependent response of Singapore buildings to long-distance Sumatra earthquakes	
17:10-17:30	Saburo Midorikawa (Tokyo Inst. Tech.) et al.	59
	Evaluation of local site effects in metropolitan areas	
17:30-17:50	Hiroaki Yamanaka (Tokyo Inst. Tech.)	63
	Construction of 3D S-wave velocity model of the Kanto plain, Japan, for strong motion prediction	
17:50-18:10	Masaki Takahashi and Yukio Yanagisawa (AIST, Tsukuba)	65
	Miocene subsurface half-grabens in the Kanto Plain, central Japan	

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Studies in Pacific Region 2

09:30-10:00	Thomas L. Pratt (USGS, Seattle)	75
	Earthquake hazard studies in the U.S. Pacific northwest: From crustal models to shallow geophysics	
10:00-10:30	Hiroshi Sato (ERI, Univ. Tokyo) et al.	79
	Deep seismic profiling in the Tokyo metropolitan area for strong ground motion prediction	
10:30-11:00	Kiyoshi Ito (DPRI, Univ. Tokyo)	85
	Seismic explosion surveys of crustal structure and deep fault zone planned in the Kinki district, Japan	
11:00-11:30	Mary Lou Zoback (USGS, Menlo Park)	91
	Earthquake hazard studies in Northern California — Probabilities to prediction	
11:30-12:00	Shoji Sekiguchi (NIED, Tsukuba) et al.	97
	Borehole drilling above the descending Philippine Sea Plate at the southern Kanto area, Japan, and the geological interpretation of the core samples	

June 22 PM

Earthquake Source Modeling 2

13:30-14:00	Paul G. Somerville (URS Corporation, Pasadena)	99
	Characterizing earthquake rupture models for the prediction of strong ground motion	
14:00-14:20	Kazuki Koketsu and Reiji Kobayashi (ERI, Univ. Tokyo)	105
	Slip distribution of the 1923 Kanto earthquake and its relation to slab reflectivity	

14:20-14:40	Kin'ya Nishigami (DPRI, Kyoto Univ.) et al.	109
	Modeling deep structure of active faults and 3-D crustal structure in and around the Kinki district	
14:40-15:00	Sou Nishimura and Manabu Hashimoto (DPRI, Kyoto Univ.)	113
	A simultaneous estimation of rigid block rotations and slip deficits rates from the GPS-derived velocity field in and around the Kinki district	
15:00-15:20	Takashi Nakata (Hiroshima Univ.) et al.	117
	Searching geological evidence for paleoseismic events in urbanized areas	

break (20 min.)

Ground Motion Simulation

15:40-16:10	Rafael A. Benites (IGNS, New Zealand) and Kim B. Olsen	119
	Modeling strong ground motion in the Wellington metropolitan area, New Zealand	
16:10-16:30	Shin Aoi (NIED, Tsukuba) et al.	121
	3-D finite difference simulation for the 2003 Tokachi-oki earthquake	
16:30-16:50	Takashi Furumura (ERI, Univ. Tokyo)	125
	Large-scale broadband simulation of strong ground motions from recent and historical damaging Earthquakes in Japan	
16:50-17:00	Mizuho Ishida (NIED, Tsukuba)	

Closing Remarks
