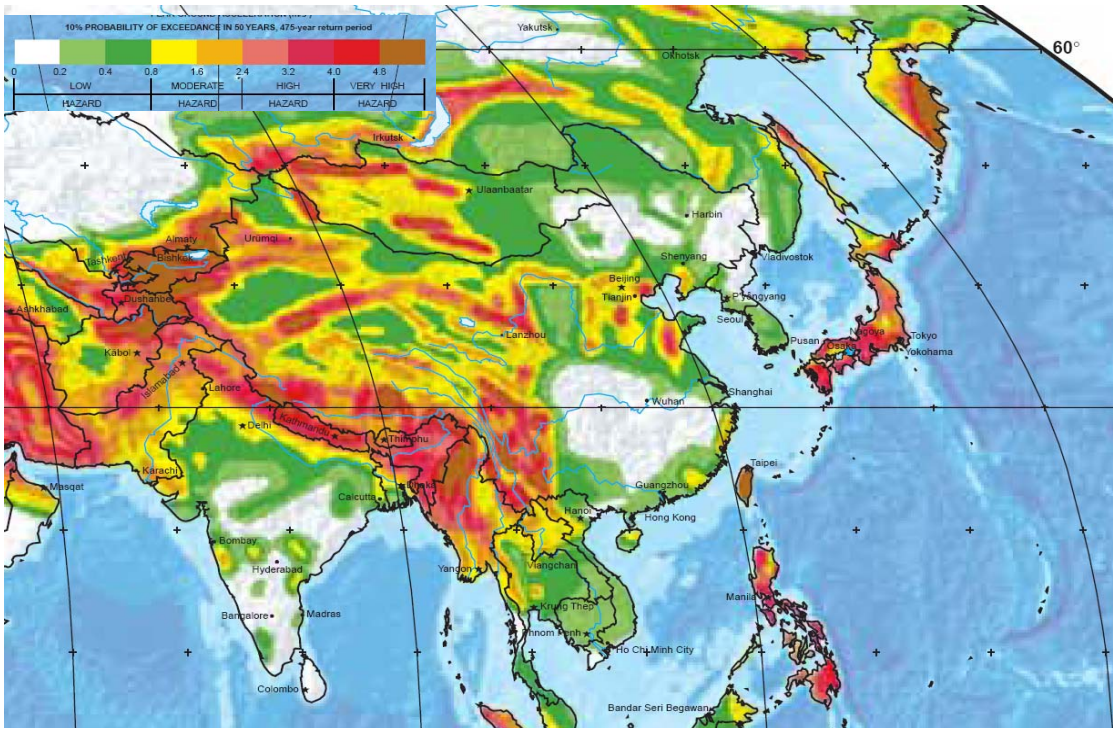
4th Taiwan - Japan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction

September 13-14,2005

National Cheng Kung University, Tainan, Taiwan

-PROCEEDING-



DPRC Disaster Prevention Research Center
National Cheng Kung University

No.1,Ta-Hsueh Rd. Tainan 701, Taiwan

4th Taiwan - Japan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction

September 13-14,2005
National Cheng Kung University, Tainan, Taiwan

Sponsor：

Disaster Prevention Research Center, National Cheng Kung University

Taiwan Disaster Prevention Society

Co-Sponsor：

Water Resource Agency, Ministry of Economic Affairs

Earth Science Research Promotion Center, National Sciences Council

Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology

Preface

Both of the NCKU-DPRC (the Disaster Prevention Research Center, National Cheng Kung University, Taiwan) and the IG-GSJ (Institute of Geoscience, Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology) were agree to pursue scientific and technical cooperation about hydrological and geochemical research for earthquake prediction in Taiwan in February 2002.

Follow the cooperation agreement, DPRC-NCKU and IG-GSJ intend to carry out cooperative research activities on (1) Investigation of groundwater anomalies associated with the earthquake in Taiwan; (2) Analysis of the natural groundwater level changes in correlation to the geotectonic and meteorological activities; (3) Improving methodologies in monitoring and studying the groundwater anomalies with respect to geotectonic activities and/or other aspect as well; (4) Compiling the future periodically-monitored information of groundwater chemical and physical properties, and geotectonic anomalies; and(5) Analysis of the groundwater anomalies as earthquake precursors.

The 1st International Workshop on Hydrological and Geochemical Research for Earthquake prediction had held on Sep. 24, 2002 at GSJ, AIST, Tsukuba, Japan. The workshop had good beginning to promote the research cooperation between Japan and Taiwan. The main purpose of the workshop this time is proceeded to collaborate, and provide an opportunity to share the precious experience with other researchers. In total, seventeen papers will be presented in this workshop.

Although the earthquake prediction is a hard scientific challenge in the century, keeping on study and making any kind of approach are the better way to contribute earthquake hazard mitigation. We hope that this workshop will offer the good ideas and experiences for related work. In view of these sincerely cooperation, we absolute believe that will help us to preserve more safety for our life.

September 2005

Chjeng-Lun Shieh and Naoji Koizumi

4th Taiwan - Japan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction, Workshop Program(September 13-14,2003)

【Sep.13 】Place: Researches and Services Headquarters Building, National Cheng Kung University

Place	Time	Program		
Lobby	08:00~08:30	Registration		
Conference Hall	08:30~08:50	Opening Ceremony		
Place	Time	Speaker	Title	Coordinator
Researches and Services Headquarters Building, Conference Hall	09:00~09:30	Associate Prof. Naoyuki Kato	Models of Preseismic Sliding and Slow Earthquakes: Implication for Precursory Phenomena of Great Interplate Earthquakes	Leader N. Koizumi
	09:30~10:00	Prof. C.L. Shieh	An Overview on the Results of the Study of Groundwater Anomalies Associated with the Earthquake in Taiwan, 2001~2005.	
	10:00~10:30	Leader N. Koizumi	Evaluation of coseismic groundwater changes caused by the 2003 Tokachi-oki earthquake	
	10:30~10:50	Coffee Break		
	10:50~11:20	Assistant Prof. T.Y. Lee	Outlier Detection for Anomaly Groundwater Level Time Series	Chief K.C. Chang
	11:20~11:50	Dr. N. Matsumoto	Quantitative Evaluation of the AIST Groundwater-Level Observation Network to Detect Preslip of the Anticipated Tokai earthquake	
	11:50~13:00	Lunch Time		
	13:00~13:30	Prof. M. C. Tom Kuo	Groundwater Radon Anomalous Decrease Before the 2003 Chengkung Earthquake in Eastern Taiwan	Director C.L. Shieh
	13:30~14:00	Dr. Fumiaki Tsunomori	Temporal Change of Gas Composition in Groundwater at Omaezaki	
	14:00~14:30	Prof. T. Y. Yang	Identification of Multiple Gas Components at Fault Zone in SW Taiwan and its Application for Earthquake Surveillance	
	14:30~15:00	Dr. Vivek Walia	Radon and Helium Precursory Anomalies for Some Earthquakes in N-W Himalaya, India	
	15:00~15:20	Coffee Break		
	15:20~16:00	Assistant Prof. C. P. Chang	Application of Space-Borne Radar Interferometry on the Crustal Deformation in Taiwan	Chief Y.P. Lee
	16:00~16:30	Dr. Mamoru Nakamura	Geometry of the seismic Philippine Sea slab and 3D velocity structure beneath eastern Taiwan-southwestern Ryukyu regions	
	16:30~17:00	Assistant Prof. W. C. Lo	The Time-Domain Decoupled Poroelastic Equations for an Elastic Porous Medium Containing a Viscous Compressible Fluid	

【Sep.14】Place: Researches and Services Headquarters Building, National Cheng Kung University

Place	Time	Speaker	Title	Coordinator
Researches and Services Headquarters Building, Conference Hall	08:30~09:00	Mr. C. Liu	Observations on Water-Level Fluctuations Induced by Distance and Local Earthquakes at Hualien Wells, Eastern Taiwan.	Diector. C.D. Jan
	09:00~09:30	Associate Prof. K.C. Hsu	On Characterizing Hydrogeological Properties of Choshuishi Alluvial Fan, Taiwan	
	09:30~10:00	Associate Prof. K. H. Cheng	The Study of Satellite Infrared Thermal Images for Earthquake Precursor	
	10:00~10:30	Associate Prof. C.L. Wang	A Numerical Study of Effective Stress and Groundwater Level Changes in Poroelastic Aquifer Under Dynamic Excitations	
	10:30~10:50	Coffee Break		
	10:50~11:20	Diector. C.D. Jan	Rainfall-Induced Groundwater Level Variation	Dr. N. Matsumoto
	11:20~11:50	Mr. W.C. Lai	Precursory and Coseismic Groundwater Level Changes with Earthquake of Taiwan, 2003~2004	

Content