APSG Workshop 2005

Geodynamics and Natural Hazards

15 – 17 June 2005
Hong Kong

Workshop Venue:
Senate Room, 16th Floor, Li Ka Shing Tower
Hong Kong Polytechnic University

Second Circular

Organized by:
Asia Pacific Space Geodynamics (APSG) Program Central Bureau
Department of Land Surveying and Geo-Informatics, Hong Kong Polytechnic University

Sponsored by:
Research Centre for Urban Hazards Mitigation, Hong Kong Polytechnic University
IAG Sub Commission 4.4: Applications of Radar Interferometry and LIDAR
FIG Task Force 6.1.3: Deformation Measurements with Satellite Radar Interferometry
Joint Laboratory for Geoinformation Science (JLGIS), CAS and Chinese University, Hong Kong
Organising Committee

Dr. Xiaoli Ding (Chair), Hong Kong Polytechnic University
Dr. Jianli Chen, University of Texas at Austin, USA
Dr. Wu Chen, Hong Kong Polytechnic University
Dr. Xiaogong Hu, Shanghai Astronomical Observatory, China
Dr. Baki Iz, Hong Kong Polytechnic University
Dr. Jinling Li, Shanghai Astronomical Observatory, China
Prof. Hui Lin, Chinese University of Hong Kong
Mr. Simon Kwok, Lands Department, Hong Kong SAR Government
Prof. Zihan Qian, Shanghai Astronomical Observatory, China
Dr. Wing Tak Wong, Hong Kong Observatory
Dr. W.W.S. Yim, Hong Kong University
Miss Ping Zhong, Hong Kong Polytechnic University (Secretary General)
Ms. Ruixian Zhou, Shanghai Astronomical Observatory, China

Advisory Committee

Prof. Shuhua Ye (Chair), Shanghai Astronomical Observatory, China
Prof. Allain Bonnesville, Universite Francaise du Pacifique, France
Dr. Benjamin Chao, NASA, U.S.A.
Prof. Junyong Chen, National Bureau of Surveying & Mapping, China
Prof. Yongqi Chen, Hong Kong Polytechnic University, Hong Kong, China
Prof. Kosuke Heki, Hokkaido University, Japan
Prof. Houtze Hsu, Institute of Geodesy & Geophysics, China
Prof. Cheng Huang, Shanghai Astronomical Observatory, China
Prof. Madhav N. Kulkarni, Indian Institute of Technology, India
Dr. John LaBrecque, NASA Headquarters, U.S.A.
Mr. John Manning, AUSLIG, Australia
Dr. Ruth Neilan, IGS, JPL, NASA, USA
Dr. Pil-Ho Park, Korea Astronomy & Space Science Institute, South Korea
Prof. Michael R. Pearlman, ILRS, Center for Astrophysics, USA
Prof. Christoph Reigber, GFZ, Germany
Dr. Sobar Sustina, National Coordination Agency for Surveying and Mapping, Indonesia
Prof. Suriya Tatevian, Russian Academy of Sciences, Russia
Dr. Philip Woodworth, PSMSL, Proudman Oceanographic Laboratory, UK
Prof. Susanna Zerbini, Universita’ di Bologna, Italy

Correspondence

APSG 2005
c/- Department of Land Surveying and Geo-Informatics
Hong Kong Polytechnic University
Hung Hom, KLN, Hong Kong, China
Email: lsxlding@polyu.edu.hk
Fax: +852 2330 2994, Telephone: +852 2766 5965
Workshop Program
Venue: Senate Room, 16th Floor, Li Ka Shing Tower
Hong Kong Polytechnic University

Day 1:  15 June 2005  Wednesday

09:00-09:30:  Opening Ceremony

Session 1:  Keynote Speeches
Conveners: Shuhua Ye, Hayo Hase

09:30-10:00:  B.F.Chao, J. LaBrecque
APRNL and NASA Activities

10:00-10:30:  C. Reigber, GGOS and Relevant Issues

10:30-11:00  Coffee Break

Session 2:  Crust Dynamics
Conveners: C. Huang, K. Heki

11:00-11:15  Junyong Chen, Zemin Wang, Shangyi Pang, Ji Zhang, Quande Zhang
On Crustal Movement in Mt. Qomolangma Area  (Invited)

11:15-11:30  Alexei Fridman  (Invited)
Comparative analysis of GPS, seismic and electromagnetic data on the
territory of the Central Tien Shan

11:30-11:45  Yong Zheng, Yabo Luo, Zhihan Qian
Relative Vertical Displacement of Plates Estimate by VLBI Baselines

11:45-12:00  Fuping Sun, Xinhui Zhu, Shubo Qiao, Weiyong Yi
Detection of Postglacial Rebound by Using VLBI Data

12:00-12:15  Jinsong Ping
Modeling the Lunar Crustal Thickness by Using Selenodetic Data

12:15-12:30  R.Govind  (TBD)

12:30-14:00  Lunch

Session 3:  Earthquake Dynamics and Tsunami
Conveners: J.Y. Chen, A.D. Switzer

14:00-14:15  B. F. Chao, R. S. Gross  (Invited)
How much has the 2004 Sumatra, Indonesian, earthquake changed the
Earth’s rotation and gravity field?

14:15-14:30  P. Medvedev, E. Kulikov, S.S. Lappo, P.P. Shirshov  
The 26 December, 2004 Indian Ocean Tsunami Registration by Satellite Altimetry Data and Some Geophysical Interpretation Time Series Data

14:30-14:45  J.L. Chen, D.W. Zheng, X.L. Ding, C. Huang  
Effect of the Mw9.0 Sumatra Earthquake on Earth Rotation: Examination of the Observational Evidence

14:45-15:00  Zhigeng Yang  
Re-discussion on Formation of the 2004 Indian Ocean earthquake and tsunami and its Regional Trend in Future

15:00-15:15  Y. Tony Song, C.K. Shum, Manman Zhang, Lee L. Fu, Yuchan Yi  
Detection and Potential Prediction of Tsunami Using Satellite Altimetry and OCGM Forced by Seismically-Inverted Sea Floor Uplifts

15:15-15:30  Adam D Switzer, Wyss W, -S. Yim  
Storm surge risk in Hong Kong: lessons from both recent and geological history

15:30-15:45  Adam D Switzer  
Sedimentary signatures of storm and tsunami: Application to coastal hazard assessment

15:45-16:15  Coffee Break

Session 4:  Problems in and Methods for Data Analysis  
Conveners: Y.Q. Chen and S. Tatevian

16:15-16:30  Kosuke Heki  (Invited)  
Transient and seasonal signals in GPS: How to discriminate?

16:30-16:45  Yonghong Zhou, David A. Salstein, Jianli Chen, Xinhao Liao  
Revised AAM under Consideration of Earth’s Topography and Earth’s Variable Rotation

16:45-17:00  Fuping Sun, Xinhui Zhu, Shubo Qiao, Weiyong Yi  
The Changes of the Earth’s Volume and Figure from Space Geodetic Observations

17:00-17:15  Yuri S. Tyupkin, Yu.Gatinsky  
The information system of satellite geodesy data and its application in geodynamics and seismology

17:15-17:30  Junhuan Peng, Cheng Huang, Shuhua Ye  
An Aggregate constraint method for Inequality-constrained least squares problem and Its Statistical Properties

17:30-17:45  Hayo Hase  (TBD)
**Day 2: 16 June 2005 Thursday**

**Session 5: VLBI in Earth System Sciences**  
Conveners: A. Finkelstein, Z.H. Qian

09:00-09:15 A. Finkelstein *(Invited)*  
The first results of VLBI observations at the Svetloe observatory in the framework of the IVS observational program

09:15-09:30 Fujinobu Takahashi, Kazuki Yanashima *(Invited)*  
The development of the software VLBI correlation system using Beowulf type PC cluster

09:30-09:45 Guangli Wang  
The station clock behaviour and tropospheric delay model’s validity from the VLBI data analysis

09:45-10:00 A. Ipatov  
The VLBI station Badary as a reference station for APSG

10:00-10:15 Mamoru Sekido *(Invited)*  
VLBI Application for Space

10:15-10:30 Zhihan Qian, Xiaogong Hu  
Precise orbit determination for the on-going Chinese lunar exploration mission ‘Chang Er’, using USB and VLBI technique

10:30-11:00 Coffee Break

**Session 6: Time-Varying Gravity and GRACE Results**  
Conveners: C.K. Shum, J.L. Chen

11:00-11:15 Jianli Chen *(Invited)*  
Understanding the Spatial Sensitivity of GRACE Time-Variable Gravity Measurement

11:15-11:30 Chen, J.L., C.R. Wilson, M. Rodell, J.S. Famiglietti  
Basin Scale Water Storage Change From GRACE and Influence of Low-Degree Gravity Change

11:30-11:45 Xiaogong Hu  
High frequency temporal Earth gravity variations detected by GRACE satellites

11:45-12:00 Xuhua Zhou, Bibo Peng, Houze Xu  
An Earth’s gravity field recovery from GRACE data

12:00-12:15 C.K. Shum, Shin-Chan Han, Chung-yen Kuo *(Invited)*  
Spaceborne Gravimetry in Studying Earth’s Dynamic Processes

12:15-12:30 Huadong Xiao, Yang Lu
Application of Parallel Computing to Spherical Harmonic Synthesis in the Earth Gravity Field

12:30-14:00  Lunch

**Session 7:  InSAR in Earth System Sciences**  
**Conveners: Hui Lin, M. Omura**

14:00-14:15  Deren Li, Mingsheng Liao, Yan Wang, Teng Wang  (Invited)
The Application of ESA Data in Topographic measurement

14:15-14:30  Makoto Omura
Airborne SAR Experiments for Monitoring Surface Change on Sakurajima Volcano, Kyushu, Japan

14:30-14:45  Björn Riedel, Wolfgang Niemeier
Results of InSAR processing in the Changjiang (Yangtze river) region

14:45-15:00  Zhiwei Li, Xiaoli Ding, Cheng Huang, Geoff Wadge, Dawei Zheng, Weibao Zou
Modeling of Atmospheric Effects on InSAR by Incorporating Terrain Elevation Information

15:00-15:15  Xu Caijun, Wang Hua, Wang Jianglin, Linlin Ge
Directionally Dependent Adaptive Sigma Median Filter

15:15-15:30  J.F. Zhang, L.X. Gong
Measuring the Surface Deformation Field Produced by Oil Mining Used the InSAR Technique

15:30-15:45  Tao Li, Jingnan Liu
Monitoring Subsidence Cone Caused by Water Pumping in Tianjin Area with InSAR Technique

15:45-16:15  Coffee Break

**Session 8:  Sea Level Change and Related Topics**  
**Conveners: H.T. Hsu, C. Hwang**

16:15-16:30  B. F. Chao, D. Garcia
Separation of steric and mass-induced sea level variations using altimetry and GRACE time-variable gravity data

16:30-16:45  Jianli Chen, Clark Wilson
Geophysical Contributions to Global Sea Level Change

16:45-17:00  Zhigeng Yang
Radial Tectonic Motions of the Continental Border around Atlantic and Sea Level Change

17:00-17:15  Cheinway Hwang, Ge-Fu Hwang, Chiung-Wu Lee, Ta-Kang Yeh, and Hui-Chin Yu  (Invited)
Responses of gravity and vertical motion to ocean loading around Southeast China coasts and Taiwan: observation and theory

Demianov G.V., Tatevian S.K.

On the unification of the European and Asian vertical datum

**Day 3: 17 June 2005 Friday**

**Session 9: Earthquake Dynamics**
*Conveners: R. Govind, W.T. Wong*

09:00-09:13 **J.F. Zhang, L.L. Xie**
Recognizing Remote Sensing Image of Buildings Destroyed after Strong Earthquake by Model Method and Evaluating Earthquake Disaster

09:13-09:26 **Zhengxin Li**
A study on the earthquakes and the related geoid deformations happened at Beijing during 1987-1998

Experimental GPS-results and displacement models for Chuya earthquake, Altay

09:39-09:52 **V. Sibgatulin, K. Simonov, S. Peretokin**
Entropic model and short-term earthquake prediction

09:52-10:05 **Supriya Likhar, Madhav N. Kulkarni**
Identifying the Aftershock Area In the Bhuj Region of Western India From GPS Data, After the 2001 Republic Day Earthquake, Using Earthquake Prediction Indicators

10:05-10:18 **Lobatskaya R.M.**
The models of acceptable risk estimation of consequences natural hazards in earthquake prone areas

10:18-10:30 **Lobatskaya R.M.**
The internal structural organization of earthquake prone fault zones and character of Earthquake Hazards

10:30-11:00 **Coffee Break**

**Session 10** GPS Applications and Atmosphere
*Conveners: M.N.Kulkarni, C.Reigber*

11:00-11:15 **Jinsong Ping, Hongping Zhang, Nanhua Yu, Wenyao Zhu, Ling Han**, Introduction of Modeling the Regional Ionospheric TEC over China

11:15-11:30 **Hongping Zhang**
Monitoring the Ionosphere Activities using GPS Network over China: the Process of an Irregularity and TID on 2003/11/03

11:30-11:45 **Shuanggen Jin, Pil-Ho Park, Jong-Uk Park, Byung-Kyu Choi**
Effects of ionospheric behaviors detected by GPS-derived TEC over Korea
11:45-12:00  Ling Han, Hongping Zhang, Jinsong Ping, Wenyao Zhu
Monitoring the Ionospheric TEC Variations over Yangzi-Delta

12:00-12:15  Nanhua Yu, Jinsong Ping
Accuracy Assessment of the Jason-1 Ionosphere Measurements

12:15-12:30  Shuli Song
Blind tropospheric delay model for navigation receivers derived from meteorological measurements in China

12:30-14:00  Lunch

Session 11:  GPS in Earth System Sciences
Conveners: Pil-Ho Park, Simon Kwok

14:00-14:15  Pil-Ho Park, Sungki Cho, Jong Uk Park, Uk Han
The 4th IGS Global Data Center at Korea Astronomy and Space Science Institute (KASI)

14:15-14:30  Yingbing Li, Shaoquan Xu
GPS Network Design for Monitoring Landslips in Three Georges Reservoir Region

14:30-14:45  Jincai Ding, Yan Huang, Qixin Ye, Xiaoxing Ma, Yiming Yang, Wenyao Zhu
A Case Study of analysis and forecast of Squall Line Based on the PWV Data from the Ground-Based GPS Network in the Yangtze River Delta Area

14:45-15:00  Sankov V.A., Luhknev A.I., Radziminovich N.V., Melnikova V.I., Miroshnitchenko A.I., Ashurkov S.V., Calais E., Deverchere J.
Quantification of the present-day crustal deformations of Mongolian block using GPS geodesy and seismotectonic data

15:00-15:15  Eric Ma, Yongqi Chen
Investigation of a GPS Multi-antenna System for Slope Stability Monitoring

15:15-15:30  Shuanggen Jin, Pil-Ho Park, UK Han
A new revision of model in GAMIT and its achievements

15:30-16:00  Coffee Break

Session 12:  Other Problems in Geodesy and Geodynamics
Conveners: W.W.-S.Yim, Xiaogong Hu

16:00-16:15  Wenbin Shen, Jinsheng Ning
The Possibility of Detecting the Inner Core’s Super Rotation by Gravimetric Approach

16:15-16:30  Ding Jian, Chang Xiaotao, Hu Jianguo, Dang Yamin, Zhang Chuanyin
The Simulation of Downward Continuation of SGG Signals

16:30-16:45  E. Kalish, G. Arnautov, M. Smirnov, Yu. Stus, A. Filkov
Gravity Variations at Seismo-active Region of Siberia by GABL Measurements

16:45-17:00  Shuanggen Jin, Pil-Ho Park
A reappraisal of the impact of a No-Net-Rotation Condition on ITRF2000 Movement Monitoring Network

17:00-17:15  P. Medvedev, V. Nepoklonov, D. Medvedev
The new results of planetary gravitation field models and Geodynamics of Russia, Indian Ocean and Western Pacific Belt

17:15-17:30  Liao Dechun, Zhou Yonghong, Liao Xinhao
Analysis of the weak 2004-2005 ENSO event

17:30-17:45  Xu Caijun, Wang Hua, Wang Jianglin, Linlin Ge
Directionally Dependent Adaptive Sigma Median Filter

17:45-18:30  Closing Meeting
Registration Form

Please fill in the Registration Form and fax, email or post it back to the corresponding address of the Organising Committee given above.

1. Name and Address

Title: Prof./Dr./Mr./Ms. (delete as appropriate)
First or Given Name: Last or Family Name:
Organisation:
Job Title/Designation:
Tel: Fax:
Email:
Address:
City: Country: Zip/Postal Code:

2. Registration Fee

Full Registration HK$2,000
Student Registration HK$1,000

3. Method of Payment

(a) By Credit Card:
Type of Credit Card: □ Master Card □ Visa
Name of Cardholder:
Credit Card Number: □□□□□□□□□□□□□□□□□□
Card Expiry Date: □□/□□ (MM/YY)
Transaction Amount: HK$

Signature of Cardholder:

(b) By Bankdraft:
Please make bankdraft payable to “The Hong Kong Polytechnic University” in either HK dollars or in US dollars. In the latter case, use an exchange rate of 1 US dollar to 7.8 HK dollars.

Cancellation/Withdrawal Policy: No refund for registration withdrawal after 1 June 2005. 50% refund if registration is cancelled before 1 June 2005.

Please either email (p.zhong@polyu.edu.hk) or fax (+852 2330 2994) the form back to the Organising Committee