



# GNSS School

## New GNSS Algorithms and Techniques for Earth Observations 2012 (nGATEo 2012)

*The Hong Kong Polytechnic University (PolyU)*

*Hong Kong, China*

*14-15 May 2012*

Change is the only constant phenomenon on this Planet. The ecosystems where we are living in, including atmosphere, geosphere, hydrosphere and biosphere of this planet, constantly undergo changes in temporal and spatial domains. With the modern GPS/GNSS system and Earth Observation System (EOS), these changes can be precisely measured and recorded by the modern imaginary and PNAV (Positioning, Navigation, Velocity and Timing) technologies in a well defined space and time reference system.

In recent years, new techniques, algorithms and instrumentations in both GPS/GNSS and EOS systems have advanced our capability to observe and measure this planet from both ground-based and space-satellite-based viewpoints.

A workshop on "New GNSS Algorithms and Techniques for Earth Observations (nGATEo)" will be held 14-15 May 2012 at The Hong Kong Polytechnic University (PolyU), Hong Kong, China. This workshop will be followed by the 2012 Chinese Navigation Association Conference to be held 16-18 May 2012 in Guangzhou, China.

With an aim to promote the academic exchange and the training of and service to young engineering/scientists and in-school MSc/PhD/postdoc researchers, this workshop is going to offer all the participants an excellent opportunity to learn the up to date research results in select topics/areas.

### Venue

This workshop will be held at the Department of Land Surveying & Geo-Informatics, The Hong Kong Polytechnic University (PolyU), Hong Kong, China. Hong Kong enjoys a reputation of being one of the most dynamic international cities in the world. Embraced by the beautiful South China Sea, Hong Kong is a favorite destination of a stunning number of visitors – 36 millions in 2011.

2012 marks the 75<sup>th</sup> anniversary of the Hong Kong Polytechnic University, an internationally ranked top 200 institution with a proud history of research and teaching excellence. The

Department of Land Surveying & Geo-Informatics, earning its international reputation in teaching and research excellence, offers high quality education in High Diploma, BSc, MSc/MPhil and PhD programs for both local and international students.

### Schedule

<b>Day one, 14 May 2012, Monday</b>		
<b>Lecture Room: R507 from 8:30 to 18:30</b>		
9:00AM-9:30AM (30 min)	Registration	Lecturers
9:30AM-10:00AM (30 min)	Welcome speeches	
10:00AM-10:30AM (30 min)	Morning Tea/Coffee & Social Networking	
<b>10:30AM-12:30Noon (120 min)</b>	<b>Session 1: Lecture &amp; Discussion</b>	<b>Dr. Jade Morton</b>
12:30Noon-2:30PM (120 min)	Lunch & Social Networking	
<b>2:30PM-4:30PM (120 min)</b>	<b>Session 2: Lecture &amp; Discussion</b>	<b>Dr. Peter Teunissen</b>
4:30PM-4:45AM (15 min)	Afternoon Tea/Coffee & Social Networking	
<b>4:45PM-6:45PM (120 min)</b>	<b>Session 3: Lecture &amp; Discussion</b>	<b>Dr. Maorong Ge</b>
6:45PM-9:00PM (135 min)	Dinner & Social Networking	
<b>Day two, 15 May 2012, Tuesday</b>		
<b>Lecture Room: R507 from 8:30 to 1:30</b>		
<b>9:00AM-11:00AM (120 min)</b>	<b>Session 4: Lecture &amp; Discussion</b>	<b>Dr. Peng Fang</b>
11:00AM-11:10AM (10 min)	Morning Tea/Coffee & Social Networking	
<b>11:10AM-1:10PM (120 min)</b>	<b>Session 5: Lecture &amp; Discussion</b>	<b>Dr. Danan Dong</b>
1:10PM-2:30PM (80 min)	Lunch & Social Networking	PolyU
Depart for Guangzhou	Train departs from Hong Kong to Guangzhou every hour. Traveling time is about 2 hours. The Hung Hom MTR train station is only 50 meters from PolyU campus.	

#### Distinguished Lecturers

Dr. Jade Morton: How GNSS Signal Processing Alters Signal Parameters: A Cautionary Tale in Using GNSS for Remote Sensing Applications

Dr. Peter Teunissen: Carrier-Phase GNSS Attitude Determination

Dr. Maorong Ge: PPP Algorithms

Dr. Peng Fang: Global and Regional Reference Frame: Establishment, Maintenance, and Application

Dr. Danan Dong: Dig out signals from deep interior of the Earth using GPS measurements

## **Who should participate?**

This workshop targets a wide spectrum of audiences including in-school Master and PhD students, post-doctoral fellow researchers, university lecturers/professors and scientists. This workshop is also an ideal opportunity for engineers who are involved with R&D for GPS/GNSS, EOS manufacturers and other related industries.

## **What to take home?**

It is expected that the participants will bring home one or more algorithms/techniques with concrete, tangible, implementable details. The lecturers will be expected to talk about every technical detail of their latest research outcomes on their topics in the areas of GNSS algorithms and Earth Observation techniques. General introduction of research outcomes with limited technical details is NOT in alignment with the purpose of this workshop. Ideally, the lecturing contents have been openly published recently. Thus the audiences can openly access the lecturing materials and it ensures the contents are new enough. Ideally, the algorithms and techniques are of generic nature for GNSS and Earth Observation research. This ensures they are useful for a wide range of research/applications by almost all the audiences.

The participants will have easy access to the lecturers and can ask lecturers any questions any time (during lecturing, lunch, dinner, social hours) until they fully understand the algorithms and techniques. It is expected that after returning home each participant can immediately use the algorithms/techniques, which they learn from the workshop, in their study and work.

## **Registration deadline & cost**

There is no GATE (nGATEo) to registration and registration is open now to both local and international participants until the deadline Hong Kong local time (UTC+8 hrs) 23:59:59, 15 March (Thursday), 2012. To ensure the workshop quality, the maximum number of registrants will be limited to approximately 30~40. Thus early registration is absolutely encouraged. Please fill in the enclosed registration form and return as instructed. Only those registrations confirmed by the workshop organizers via email can be considered a successful registration.

The registration fee is only Hong Kong dollar HK\$200 (approximately US\$25), which can be paid by credit card or cheque or cash in advance or be collected on site on 14 May 2012. There is no any other cost associated with the workshop. The accommodations (hotel and meals) and transportation to/from Hong Kong are the responsibility of the participants themselves.

## **Remuneration to lecturers & participants**

There will be no subsidy to participants or lecturers. The lecturers and participants have to cover their own costs in Hong Kong. However, the organizers will try best to get sponsorship to cover 2-day accommodation for the lecturers though this is not guaranteed.

## **Hosting and sponsoring organizations**

The workshop will be hosted by:



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學

Department of Land Surveying & Geo-Informatics (LSGI)  
Faculty of Construction and Environment (FCE)  
The Hong Kong Polytechnic University (PolyU)  
Hong Kong, China



DEPARTMENT OF  
LAND SURVEYING AND GEO-INFORMATICS  
土地測量及地理資訊學系

This workshop will be sponsored by:



International Association of Chinese Professionals in  
Global Positioning Systems (CPGPS)



International Association of Geodesy (IAG)  
Sub-Commission 4.5: High Precision GNSS Algorithms and  
Applications

All the participants will receive from the organizers a certificate of attendance. A plaque of appreciation will be issued to the workshop lecturers. Both certificates and plaques will bear the signatures of the heads of the hosting and sponsoring organizations.

## **Contact information**

For registration and other non-technical questions, please feel free to contact:

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For technical questions, please feel free to contact:

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Director, Hydrographic Surveying Laboratory  
Secretary, IAG Sub-Commission 4.5: High-Precision GNSS Algorithms and Applications  
Vice President, International Association of Chinese Professionals in Global Positioning  
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