



## Satellite Navigation Science and Technology for Africa

23 March to 9 April 2009

Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics, in co-operation with the Boston College of the United States, is organizing a **Workshop on Satellite Navigation Science and Technology for Africa** from 23 March to 9 April 2009. It will be directed by Professors **P. H. Doherty** (Boston College, USA), and **S. M. Radicella** (ICTP, Trieste, Italy).

Local Organiser: **Prof. S. M. Radicella** (ICTP, Trieste)

### WORKSHOP PURPOSE AND TOPICS:

Global Navigation Satellite Systems provide an enabling technology that can make major contributions to economic growth and societal betterment worldwide. International organizations have recognized this fact and have initiated the deployment of infrastructure to allow Africa to exploit this technology. Unfortunately, these developments have been slow due to limited funding and a short supply of educated workers to support GNSS activities in Africa. The educational programme of our workshop is directed to prepare a future knowledgeable GNSS African workforce that is necessary for the sustainability of this revolutionizing science and technology.

The workshop will include formal lectures and hands-on practice in GNSS architecture and signal structure, hardware, state of the art applications and scientific exploration using GNSS. Some of the applications that will be demonstrated include remote sensing; precision agriculture; mapping and surveying; air, land and sea navigation; and emergency location systems. In addition, lectures and demonstrations of using GNSS for scientific exploration will also be addressed. In particular, space weather and ionospheric research activities will be described in an effort to initiate space science research programs in African universities.

The workshops will be taught by worldwide experts in GNSS science and technology.

**PARTICIPATION:** The Workshop calls for the participation of a number of lecturers/professors of African universities and research centres to promote the establishment of GNSS programmes and research at the university level in the region. The selected participants will be entitled to propose the participation in the Workshop of up to three students from their university or research centre. Although the main purpose of the Centre is to help researchers from Africa, through a programme of training activities within a framework of international co-operation, scientists from developed countries are also welcome to apply at their own expense. As the activity will be conducted in English, participants should have an adequate working knowledge of this language.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants, who are nationals of, and working in, an African country. Such support is available only for those who attend the entire activity. There is no registration fee.

### HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website

<http://agenda.ictp.it/smr.php?2025>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

Deadline for requesting participation: **1 December 2008**

### ACTIVITY SECRETARIAT:

Telephone: +39-040-2240576      Telefax: +39-040-2240585

E-mail: [smr2025@ictp.it](mailto:smr2025@ictp.it)      ICTP Home Page: <http://www.ictp.it/>

### CO-SPONSORS:

**Boston College, USA**  
**Institute of Navigation, USA**  
**Federal Aviation Administration, USA**

### *Directors*

**P. Doherty**      Boston College, USA  
**S. Radicella**      ARPL-ICTP, Italy

### *Invited Lecturers*

**B. Arbesser-Rastburg**      ESA-ESTEC, The Netherlands  
**S. Basu**      Boston College, USA  
**A. Coster**      MIT Haystack Lab, USA  
**P. Enge**      Stanford University, USA  
**D. Grejner-Brzezinska**      Ohio State University, USA  
**K. Groves**      AFRL, USA  
**C. Hegarty**      MITRE Corporation, USA  
**M. Hernandez-Pajares**      Technical Univ. of Catalonia, Spain  
**W. Klepczynski**      US Naval Observatory, USA  
**M. Miller**      AFRL, USA  
**B. Nava**      ARPL-ICTP, Italy  
**L. Ciruolo**      IFAC, Florence, Italy  
**S. Skone**      Univ. of Calgary, Canada  
**C. Valladares**      Boston College, USA  
**T. Walter**      Stanford College, USA  
**P. Ward**      Navward GPS, USA

### **DEADLINE**

for requesting participation

**1 December 2008**