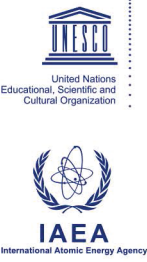




The Abdus Salam

**International Centre
for Theoretical Physics**

www.ictp.it



Workshop on Ionospheric Effects on SBAS and GBAS Applications at Low Latitudes

2 – 13 March 2015

(Miramare - Trieste, Italy)

The Abdus Salam International Centre for Theoretical Physics in co-operation with Boston College is organizing this Workshop to be held at ICTP, Trieste, Italy from 2 to 13 March 2015. Additional co-sponsors are the European Space Agency, the Institute of Navigation (USA), the United States of America and the European Union through the International Committee on Global Navigation Satellite Systems (ICG) and the International Union of Geodesy and Geophysics.

Workshop Purpose and Topics

Ionospheric research is an essential component of the development and implementation of global navigation satellite augmentation systems. A good understanding of the challenges posed by the ionosphere could provide important insights to the development of such systems. This is particularly true at low latitudes where most of the developing countries lie.

A Satellite Based Augmentation System (SBAS) is a wide-area differential augmentation system that collects and processes the data provided by a ground station network and computes corrections to the original navigation information. Some of the most important corrections are the ionospheric correction and error bounds. The Ground Based Augmentation System (GBAS) is intended primarily to support aviation precision approach operations in the vicinity of a single airport. It consists of a GBAS Ground Subsystem and a GBAS Aircraft Subsystem. The ground subsystem provides the aircraft with approach path data and, for each satellite in view, corrections that include the ionospheric component. The "normal" behavior of the ionosphere has a very limited impact on the position error in GBAS operation. However, strong ionospheric variations like those found at low latitudes can be a serious threat for such operations. Ionospheric research, in the SBAS and GBAS context, is concerned with characterizing ionospheric effects over these systems, particularly critical at low latitudes.

Researchers from developing countries are becoming more and more interested in acquiring knowledge about these effects in view of the possible implementation of SBAS and GBAS systems in their countries. The aim of this workshop is to contribute to the promotion of ionospheric research in low latitude countries with a clear orientation towards the support to the needs of navigation satellite augmentation systems that could be implemented in those countries.

The following topics will be considered:

- ✦ Introduction to Satellite Navigation
- ✦ Introduction to Low Latitudes ionosphere
- ✦ SBAS fundamentals
- ✦ GBAS fundamentals
- ✦ Ionospheric effects and their mitigation in SBAS operations
- ✦ Ionospheric effects and their mitigation in GBAS operations

Participation

Applicants from all countries that are members of the United Nations, UNESCO or IAEA may attend. As the School will be conducted in English, participants should have an adequate working knowledge of this language. Although the main purpose of the Centre is to help research workers from developing countries through a programme of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend.

As a rule, travel and subsistence expenses of the participants should be borne by their home institutions. 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, a developing country, and who are not more than 45 years old. Such support is available only to those attending the entire activity. *There is no registration fee.*

HOW TO APPLY FOR PARTICIPATION

The Online Application can be accessed at: <http://indico.ictp.it/event/a14232/>

Comprehensive instructions will guide you step-by-step on how to fill out and submit the application form. Kindly send all file attachments in Word or Acrobat format.

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Co-Sponsors



Boston College



European Space Agency



Institute of Navigation



**International Union of Geodesy and
Geophysics**



**International Committee on Global
Navigation Satellite Systems**

Organizers

**S. Radicella
(ICTP Trieste, Italy)**

**P. Doherty
(Boston College, USA)**

Local organizer

**B. Nava
(ICTP Trieste, Italy)**

DEADLINE
to request participation

8 December 2014