The Abdus Salam
International Centre
for Theoretical Physics
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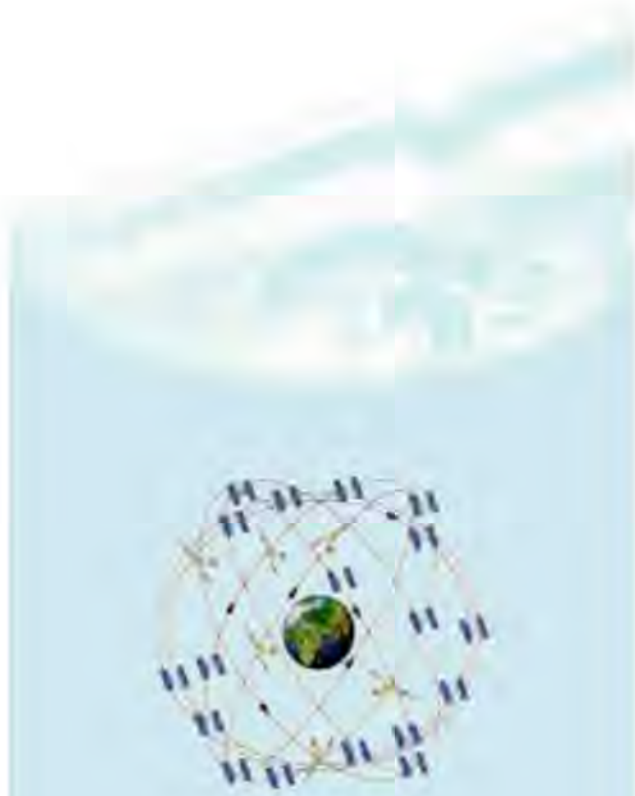
Workshop on GNSS Data Application to Low Latitude Ionospheric Research

6 - 17 May 2013

Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics, in co-operation with Boston College (BC) of the United States, is organizing a **Workshop on GNSS Data Application to Low Latitude Ionospheric Research from 6 - 17 May 2013.**



WORKSHOP PURPOSE AND TOPICS

The low latitude ionosphere is a dynamic geophysical system that is difficult to study. Indeed the complex ionospheric and atmospheric dynamics within this region contribute to the formation of the so-called "Equatorial Anomaly" that extends from the magnetic equator to 30° geomagnetic latitude in each hemisphere. At low latitudes, unique phenomena occur (such as near-midnight TEC enhancements, TEC depletions or equatorial plasma bubbles and scintillation). They can affect Satellite Navigation Systems but, likewise, they can be studied using ground and space-based GNSS data. Many Developing Countries are located under the Ionospheric Equatorial Anomaly, where those effects on Satellite Navigation System are more remarkable.
In the last few years different institutions have started to deploy several experimental instruments of different kinds (*e.g.* GNSS receivers, ionosondes, magnetometers, etc in low latitude Countries, such as in Africa, South-America and Asia, over which the ionosphere had remained less known because of the scarce distribution of ionospheric sensors. As a consequence the new sets of data now available are expected to make possible improvements in ionospheric modeling efforts particularly considering data assimilation techniques. In addition the possibility to help explain some specific phenomena that take place in this region (and that are still not well understood) could be envisaged.
Moreover, GNSS are used to provide positioning accuracy and safety for navigation on the ground, in the air and on the sea. Since the ionosphere is a major error source for GNSS performance, an improved knowledge of the low latitude ionosphere would help to address mitigation techniques for ionospheric effects on GNSS positioning applications (*e.g.* precision agriculture, environmental monitoring, civilian aviation) in the same geographic region.

More specifically the following topics will be considered:

Fundamentals and Applications of GNSS;
Basics on the ionosphere and space weather effects;
Low Latitude Ionosphere;
GNSS derived ionospheric data;
Ionospheric models;
Ionospheric irregularities in low latitudes;
Data assimilation in ionospheric models;
Ionospheric specification and forecast in low latitudes;
Longitudinal differences in low latitude ionosphere;
Low latitude ionosphere effects on Satellite Navigation Systems.

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

PARTICIPATION

The Workshop calls for the participation of a number of researchers/professors from developing countries to consolidate the establishment of GNSS programs and research at university level in their region. The activity will be conducted in English, therefore 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 travel expenses. However, limited funds are available for some participants, who are nationals of, and working, in developing countries. 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://cdsagenda5.ictp.it/full_display.php?ida=a12180

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: **31 January 2013**

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MAIN CO-SPONSORS:

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European Space Agency
International Committee on GNSS

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Deadline is extended for those who can pay their own way.

DEADLINE
for requesting participation

31 January 2013