



# INTERNATIONAL SCHOOL OF SPACE SCIENCE

## L'Aquila - ITALY

### Ground and space-based instruments for future research in Solar-Terrestrial physics

6-10 June 2016, L'Aquila (Italy)

#### Programme and Lecturers

##### SOLAR ACTIVITY EFFECTS ON THE EARTH'S IONOSPHERE AND ATMOSPHERE

I. Tsagouri (National Observatory of Athens and Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing, Greece)  
*Solar activity effects on the Earth's upper atmosphere: modeling the ionospheric storm time response to different solar wind drivers*

L. Alfonsi (Istituto Nazionale di Geofisica e Vulcanologia, Italy)  
*The ionospheric irregularities: from the measurement to the phenomenon*

L. R. Cander (Rutherford Appleton Laboratory, United Kingdom)  
*Causes, effects and models of ionospheric storms*

F. M. Marcucci (INAF-Institute for Space Astrophysics and Planetology, Italy)  
*Circumterrestrial space processes as observed by the Super Dual Auroral Radar Network (SuperDARN)*

C. Cagnazzo (CNR-Institute of Atmospheric Sciences and Climate, Italy)  
*Solar influences on Earth's climate*

C. Albanese (Telespazio, Italy)  
*Space Weather and Ionospheric Services*

##### SOLAR-TERRESTRIAL PHYSICS: DATA ANALYSIS TOOLS

D. del Moro (University of Rome Tor Vergata, Italy)  
*Spectro-polarimetric Inversion*

E. Pietropaolo (University of L'Aquila, Italy)  
*Digital signal processing*

L. Ciruolo (Abdus Salam International Centre for Theoretical Physics, Italy)  
*Estimation of TEC by GNSS observations*

##### A SPECIAL OPEN SESSION WILL BE DEDICATED TO ORAL/POSTER CONTRIBUTIONS OF THE STUDENTS

##### BOARD OF DIRECTORS:

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#### GENERAL INFORMATION

School activities will be held at Gran Sasso Science Institute in L'Aquila (<http://www.gssi.infn.it>).

Applications, including a brief curriculum vitae, are due before **March 27, 2016** through the website

[www.cifs-iss.org/application.asp](http://www.cifs-iss.org/application.asp)

The fee of 700 Euro includes board and lodging at nearby hotels. Some financial support will be available for a limited number of students. Students are encouraged to present their own contributions in an open session.

Applications will be evaluated by the Scientific Committee of the International School of Space Science, who will decide also on the financial support.

Successful applicants will be notified by e-mail.

##### SCHOOL RATIONALE

The course is designed for PhD students and young post-doctoral researchers. The school will offer an interactive, hands-on approach to the computational and experimental techniques that will be applied in the next generation of ground- and space-based instruments for solar-terrestrial physics related research. In particular, a mix of experienced scientists and engineers will provide an integrated overview of the experimental techniques that are being applied in the observation and forecasting of Solar Activity, Space Weather, and the conditions in the Earth's magnetosphere and ionosphere: all of which are important components of Space Situational Awareness.

##### NEXT GENERATION INSTRUMENTS FOR HELIOPHYSICS AND SPACE CLIMATE AND WEATHER

H. Socas Navarro (Instituto de Astrofísica de Canarias, Spain)  
*Spectropolarimetry with next generation solar telescopes*

R. Bruno (INAF-Institute for Space Astrophysics and Planetology, Italy)  
*Solar wind: The legacy of Helios and the promises of Solar Orbiter*

C. Briand (Observatoire de Paris - LESIA, France)  
*Sun and heliosphere: what can we learn from the radio?*

S. McIntosh (High Altitude Observatory, USA)  
*Synoptic telescopes and solar cycle*

R. Sparvoli (University of Rome Tor Vergata, Italy)  
*Space storms and astroparticles*

S. Jefferies (Georgia State University and Institute for Astronomy, University of Hawaii, USA)  
*Magneto optical filters for probing the Sun's interior and atmosphere*

P. De Michelis (Istituto Nazionale di Geofisica e Vulcanologia, Italy)  
*On the geomagnetic field variations: from the measurements to their physical interpretation*

N. Murphy (NASA, Jet Propulsion Laboratory, USA)  
*CubeSat and small satellites for the observation of solar dynamics and space weather*

E. Flamini (Italian Space Agency, Italy)  
*Sun and Planets future space missions*



L'Aquila, Porta Bazzano