

INTERNATIONAL SCHOOL OF SPACE SCIENCE

L'Aquila - ITALY

Astrophysical and Space Plasmas

L'Aquila, September 2-8, 2012

Programme and Lecturers

Observations

- M. Vellante (University of L'Aquila)
Plasma diagnostics in the Earth's magnetosphere
- R. Bruno (INAF-IAPS, Roma)
The solar wind as a turbulence laboratory
- T. Ray (IAS, Dublin)
Star formation regions
- E. Del Monte (INAF-IAPS, Roma)
GRBs
- A. Giuliani (INAF-IASF, Milano)
Middle-aged SNRs
- M. Tavani (INAF-IAPS, Roma and University of Rome Tor Vergata)
The flaring Crab Nebula: theoretical challenges
- F. Aharonian (MPIK, Heidelberg)
Active galactic nuclei from radio to gamma rays
- G. Giovannini (University of Bologna)
Extended extragalactic radio sources
- N. Mandolesi (INAF-IASF, Bologna)
Intergalactic and intracluster medium, cosmological plasmas
- A. Anselmi (Thales Alenia Space)
Plasma diagnostics in space missions

Plasma theory

- F. Pegoraro (University of Pisa)
MHD plasmas: instabilities, reconnection
- A. Ferrari (CIFS, Torino and University of Torino)
Instabilities in non-thermal plasmas
- R. Rosner (University of Chicago)
Turbulent plasmas, transport phenomena
- F. Cattaneo (University of Chicago)
Astrophysical dynamos
- P. Blasi (INAF-OA Arcetri)
Particle acceleration
- A. Mignone (University of Torino)
Numerical methods, MHD
- F. Califano (University of Pisa)
Numerical methods, Kinetic
- B. Coppi (M.I.T., Cambridge, USA)
Laboratory experiments and astrophysics

Modelling

- V. Carbone (University of Calabria)
Turbulence in solar wind
- G. Zimbardo (University of Calabria)
Nondiffusive transport in space and laboratory plasmas
- M. Velli (University of Firenze)
Winds and interaction with interstellar medium
- G. Bodo (INAF-OATO, Torino)
Accretion disks
- S. Massaglia (University of Torino)
Jets, thermal and non-thermal components
- N. Bucciantini (INAF-OA Arcetri)
High-frequency radiation from compact objects: pulsars, X-ray binaries, gamma-ray bursts

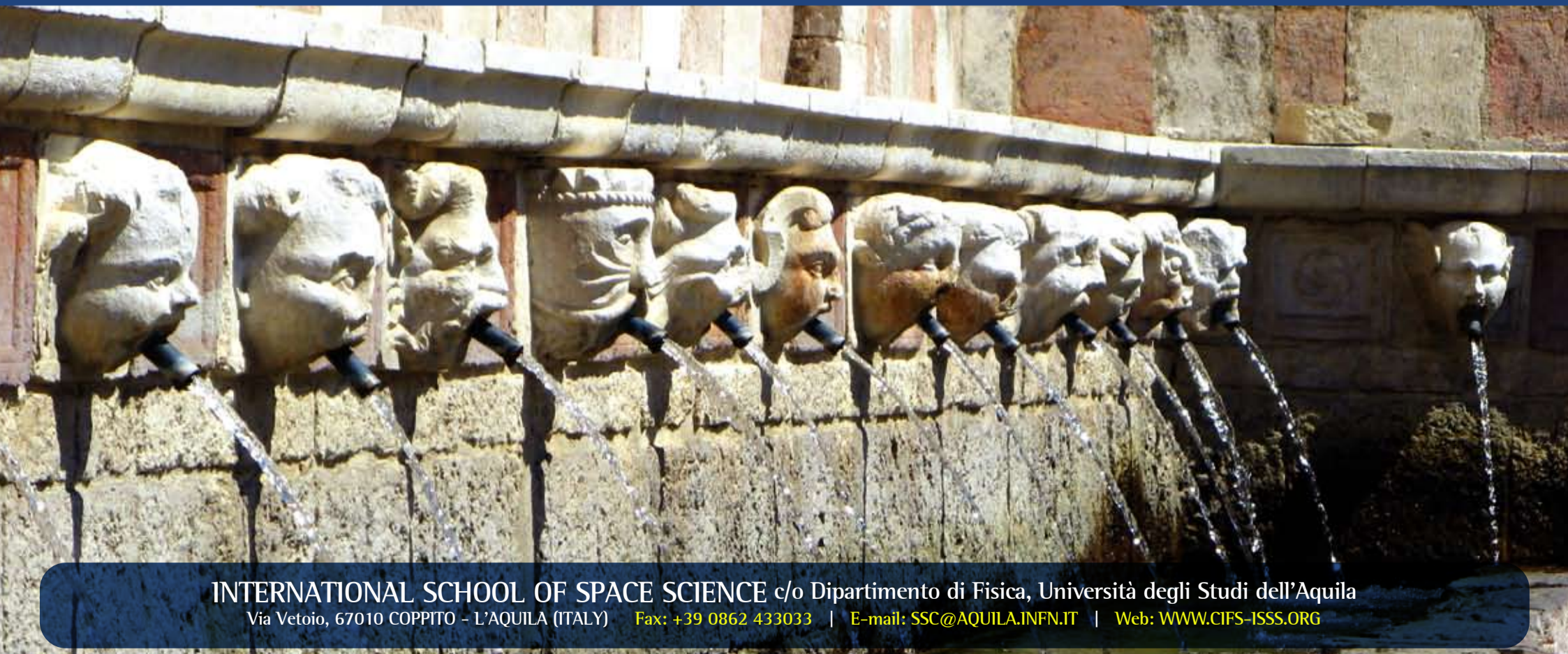
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The Director of the School: U. Villante umberto.villante@aquila.infn.it

The aim of the School is to present a comprehensive discussion of the plasma processes relevant to the astrophysical context, from low energy phenomena in planetary systems to the very high energy objects recently discovered through X and gamma ray observatories. Introductory lectures will be dedicated to an analysis of observations available from ground and space observatories enlightening the thermal and non-thermal plasma processes necessary for their interpretation. At the same time the theoretical tools, analytical and numerical, necessary for their interpretation will be presented from an institutional point of view. Finally current models of the astrophysical objects and phenomena will be discussed with particular attention to the critical points with the objective of selecting new research lines.

General Information

The fee of 1.000 Euro includes board and lodging at the Canadian Hotel in L'Aquila. Applications, including a brief curriculum vitae, are due before June 24 through the website: WWW.CIFS-ISSS.ORG/APPLICATION

Some financial support will be available for a limited number of students. 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.



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