

The heliospheric space plasma physics in the era of multipoint space missions

INTERNATIONAL SCHOOL, 18-22MAY 2026, L'AQUILA - ITALY

HELIOSPHERIC PLASMA: NEW PERSPECTIVES AND TECHNIQUES

W. H. Matthaeus (University of Delaware, USA)

"Multispacecraft Measurement of Fundamental Turbulence Properties: Progress and Outstanding Problems"

G. Consolini (Istituto Nazionale di Astrofisica, Italy)

"From kinetic scales to fluid scales in space plasmas: quantities requiring a multipoint information"

S. Servidio (Università della Calabria, Italy)

"New Multipoint Techniques for the Comprehension of Turbulence in the Heliosphere"

K. G. Klein (University of Arizona, USA)

"Magnetic Field Reconstruction and Power Estimation: Theory and Extension to Future Multipoint, Multiscale Missions"

C. H. Lhotka (Università di Roma Tor Vergata, Italy)

"Plasma-Dust Coupling in the Heliosphere"

SUN

F. Berrilli (Università di Roma Tor Vergata, Italy)

"The active Sun: magnetic fields, flares, and surface organization"

M. Snow (South Africa National Space Agency, South Africa)

"Seconds to centuries: chromospheric variability"

R. Casini (High Altitude Observatory, NSF NCAR, USA)

"Scattering polarization diagnostics of coronal magnetism"

S. K. Solanki (Max Planck Institute for Solar System Research, Germany)

"The Sun's magnetic field and its consequences: from single to multiple viewpoints"

Board of Directors:

F. Berrilli (Università di Roma Tor Vergata, Italy)

G. Consolini (Istituto Nazionale di Astrofisica, Italy)

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SOLAR WIND

A. Chasapis (LASP, University of Colorado, USA)

"Multi-spacecraft analysis methods in space plasma: towards a new era of multi-scale science"

S. C. Chapman (University of Warwick, UK)

"Identifying, classifying and parameterizing coherent structures in multipoint observations-wavelets, crossing theory, field gradient tensors, clustering and networks"

A. Verdini (Università di Firenze, Italy)

"Anisotropies in the turbulent solar wind, perspective on multipoint observations from numerical simulations"

EARTH'S MAGNETOSPHERE

A. Retinò (Laboratoire de Physique des Plasmas, CNRS, France)

"On magnetic reconnection in space plasmas: current and future perspectives from multipoint & multiscale missions"

R. Bandyopadhyay (University of Delaware, USA)

"Role of Multipoint Space Missions in Unraveling Multi-scale Processes in Space Plasmas"

FUTURE MULTIPOINT SPACE MISSIONS

M. F. Marcucci (Istituto Nazionale di Astrofisica, Italy)

"The ESA M7 candidate mission Plasma Observatory"

K. G. Klein (University of Arizona, USA)

"Characterizing Space Plasma Turbulence with a multipoint, multiscale observatory: an overview of HelioSwarm"

Local Organizing Committee:

G. D'Angelo (Dip. di Scienze Fisiche e Chimiche - UNIVAQ L'Aquila)

A. R. Leone (School secretariat, info@astrogeofisica.it)

S. Lepidi (Istituto Nazionale di Geofisica e Vulcanologia - L'Aquila)

M. Piersanti (Dip. di Scienze Fisiche e Chimiche - UNIVAQ L'Aquila)

SCHOOL RATIONALE

The school will serve as a comprehensive introduction to the importance of multipoint measurements in the understanding of heliospheric space plasma physics from the Sun to the Earth's magnetospheric environment. Multipoint measurements are indeed crucial for investigating phenomena such as magnetic reconnection, plasma turbulence, shock wave formation, and particle acceleration, as well as, the three-dimensional structure of the solar corona, tracking the evolution of solar eruptions, and understanding the initiation and propagation of solar wind streams, which all play central roles in the dynamics of the solar and heliospheric plasmas as well as its interaction with planetary magnetospheres. This course aims at providing an overview of the importance of multipoint measurements in studying space plasma processes occurring in the heliosphere to establish a critical connection between the data from future missions and complementary data from next-generation ground-based observatories. The school is addressed to graduate and PhD students, young scientists as well as undergraduates in heliophysics, space plasma physics, planetary sciences, or related fields. Early-career stage professionals are invited to apply as well.

GENERAL INFORMATION

The School will be held in L'Aquila at the Università dell'Aquila, Italy. Applications, including a brief curriculum vitae, are due before **1 March, 2026**. See the website <https://www.astrogeofisica.it/hssp/> for details. Applications will be evaluated by the Board of Directors of the School, after which all applicants will be notified by e-mail. The registration fee of 1000 Euros includes board and lodging in shared double rooms at nearby hotels and B&Bs and social events. Some financial support will be available for a limited number of students on request. (only in case of real need for a partial reduction of the registration fee; not for other expenses, including travel). The payment conditions will be communicated via email to applicants who receive positive evaluation.

School Secretariat c/o Dip. di Scienze Fisiche e Chimiche - UNIVAQ L'Aquila.

e-mail: info@astrogeofisica.it

Website: <https://www.astrogeofisica.it/hssp/>