



The Abdus Salam
**International Centre
for Theoretical Physics**



Joint ICTP-IAEA School on Atomic and Molecular Processes in Plasmas

Description:

This joint IAEA-ICTP School will include a 5-day series of lectures and computing practical exercises from leading researchers to help early-career plasma physicists develop an understanding of the fundamental processes that govern radiative and collisional properties of diverse plasmas.

MORE DETAILS:

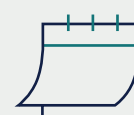
The purpose of this School is to provide training and knowledge-transfer for plasma physicists and plasma spectroscopists by bringing together experts in experimental and theoretical plasma spectroscopy. The chosen topics are those relevant to the spectroscopic analysis and modeling of plasmas at the atomic and molecular levels with applications to fusion, astrophysics, and industry. Several representative experimental cases for diverse plasma conditions will be thoroughly discussed with an emphasis on spectroscopic diagnostics. Data management and analysis, online data tools and artificial intelligence applications related to the topics covered will be introduced, with practical examples and exercises supporting the lectures and demonstrations.

TOPICS:

- Modern methods for the calculation of atomic structure, radiation, and collisions
- Fundamentals of molecular spectroscopy and molecular processes in plasmas
- Ionization distributions, spectral line intensities and collisional-radiative modeling
- Spectroscopy of plasma-surface interactions
- Diagnostics of high- and low-temperature plasmas in magnetic fusion devices
- Astrophysical spectroscopy
- Machine learning techniques for plasmas
- Online atomic and molecular databases and tools
- Data management and dissemination

SPEAKERS:

Ursel Fantz, MPI for Plasma Physics, Germany
Rémy Guirlet, CEA, France
Kalle Heinola, IAEA, Austria
Christian Hill, UCL, UK
Yuri Ralchenko, UMD/NASA, USA
Ioan Schneider, U. Le Havre Normandy, France
Lalita Sharma, IAEA, Austria
Jonathan Tennyson, UCL, UK



4 - 8 May 2026



Trieste, Italy



**Deadline:
25 January 2026**

DIRECTORS:

Kalle Heinola, IAEA, Austria
Christian Hill, UCL, UK
Yui Ralchenko, U. Maryland/NASA, USA

LOCAL ORGANISER:

Nicola Seriani, ICTP, Italy

FURTHER INFORMATION:

E-mail: smr4214@ictp.it

Web: <http://indico.ictp.it/event/11140/>

Female scientists are encouraged to apply.



REGISTRATION:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

