

Course CLXXVII - "Advanced methods in optical fluorescence microscopy towards nanoscopy"

12 - 17 July 2010

Directors: G. J. Brakenhoff (Amsterdam University), A. Diaspro (IIT di Genova)

Topics:

Fluorescence (Photophysics, Fluorescent molecules, Green Fluorescent Proteins, Photoswitchable/Photoactivatable Molecules, Photobleaching, Fluorescence Resonance Energy Transfer - FRET)

Three-dimensional Optical Microscopy: instruments and theory (Wide-field microscopy, Confocal and Multiphoton Microscopy, Selective Plane Illumination Microscopy, Optical sectioning, Inverse problems, Standardization and calibration methods)

Laser sources (CW, ps/fs, ultrafast, white light, fiber)

Advanced Optical Methods (3D Fluorescence Recovery after Photobleaching - FRAP, FRET, Fluorescence Lifetime Imaging Microscopy, Fluorescence Correlation Spectroscopy, Second-Harmonic Generation Microscopy, Single Molecule Tracking, Single molecule detection, Optical trapping, squeezing and manipulation, Plasmonics, Nanoplasmonics)

Optical Nanoscopy and Super Resolution Microscopy (4PI, I5M, Structured Illumination, PALM, FPAM, STED, RESOLFT)

Lecturers:

Tony Wilson Freng (Oxford), Colin JR Sheppard (Singapore), Fred S. Wouters (Göttingen), Gertrude Bunt (Göttingen), Ranieri Bizzarri (Pisa), Enzo Di Fabrizio (Genova), Mark I. Stockman (Atlanta), Gail McConnell (Glasgow), Kevin Braeckmans (Gent), Rainer Heintzman (London), Samuel T. Hess (Orono), Stefan W. Hell (Göttingen), R. Th. Borlinghaus, Dr.rer.nat. (Mannheim)

Scientific Secretary

Paolo Bianchini (Genova)



International School of Physics "E. Fermi"

International School of Physics "Enrico Fermi"

Varenna, Lake of Como

THE INTERNATIONAL SCHOOL OF PHYSICS "ENRICO FERMI", one of the most significant cultural activities of the Italian Physical Society, was founded in 1953 by the President of that time, Prof. Giovanni Polvani.

The Courses of the School, usually held in summer, by now have become a special and precious opportunity of meeting for scientists and young physicists from all over the world and have reached considerable international prestige.

Three annual Courses of one or two weeks each, normally held from June through July, are chosen by the SIF Council among numerous proposals arriving from either Italian or foreign groups of physicists or physics institutions. Considerable attention is paid to the cultural impact, the up-to-date scientific content, as well as a fair distribution and promotion among the different fields of physics. Each Course has two or more Directors and a Scientific Secretary. The task of the Directors consists in choosing and inviting Lecturers and Seminar Speakers, taking into account their scientific competence. Participants are selected, upon application, by the Directors of the Course together with the SIF President on the basis of the information submitted, with regard also to a fair distribution of the available posts among various nationalities. Approximately 50 students attend each Course of the School.

At the end of the Course, all lectures and seminars are grouped and published in the prestigious series "Proceedings of the International School of Physics Enrico Fermi" of the Italian Physical Society.

The School has its institutional seat in the Villa Monastero at Varenna, on Lake Como.

http://www.sif.it/SIF/en/portal/activities/fermi_school