

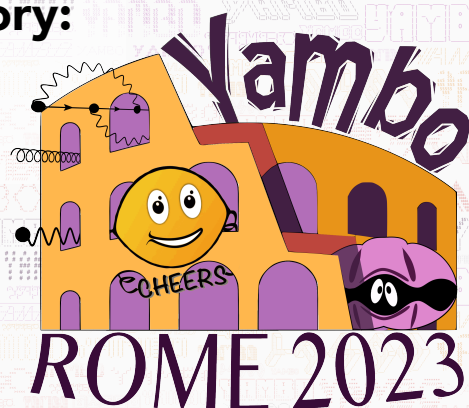
Ab Initio Many-Body Perturbation Theory: From Equilibrium to Time-Resolved Spectroscopies and Nonlinear Optics



22-26 May 2023



Argiletum, Sala Urbano VIII
Via Madonna dei Monti 40, Rome



The school will introduce many-body perturbation theory approaches to first-principles simulations on the excited states of materials using the **YAMBO** code. Advanced nonequilibrium techniques for ultrafast spectroscopy will also be introduced along with the **CHEERS** code.

Both theoretical and technical lectures will be offered as well as dedicated hands-on sessions about using the codes in realistic simulations.

General topics will include quasiparticles with the GW approximation and excitons via the Bethe-Salpeter equation. Advanced topics comprise nonlinear optics and time-resolved dissipative dynamics via nonequilibrium Green's function theory. Each topic will be introduced with a general overview of experimental measurements and/or physical problems, with a clear link to the hands-on sessions.

Participants are required to have a pre-existing background in DFT and in running DFT simulations.

Lecturers:

- C. CARDOSO, CNR-NANO Modena
- R. FRIENDA, Università di Roma La Sapienza
- A. GUANDALINI, Università di Roma La Sapienza
- M. GRÜNING, Queen's University Belfast
- D.A. LEON, NMBU, As, Norway
- A. MARINI, CNR-ISM, Roma
- M. MARSILI, Università di Bologna
- A. MOLINA-SÁNCHEZ, Universitat de València
- S. MOR, Università Cattolica del Sacro Cuore, Brescia
- F. PALEARI, CNR-NANO, Modena
- M. PALUMMO, Università di Roma Tor Vergata
- Y. PAVLYUKH, Wrocław University of Science and Technology
- E. PERFETTO, Università di Roma Tor Vergata
- D. SANGALLI, CNR-ISM Roma
- G. STEFANUCCI, Università di Roma Tor Vergata
- N. TANCOGNE-DEJEAN, MPSD Hamburg
- D. VARSANO, CNR-NANO Modena

Organizers:

- M. GRÜNING (Queen's University Belfast), A. MOLINA-SÁNCHEZ (Universitat de València), F. PALEARI (CNR-NANO, Modena), M. PALUMMO (Università di Roma Tor Vergata), O. PULCI (Università di Roma Tor Vergata), D. SANGALLI (CNR-ISM, Roma), D. VARSANO (CNR-NANO, Modena), M. D'ALESSIO (University of Modena and Reggio Emilia)

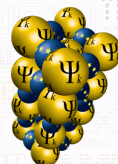
Contact: yambo@yambo-code.eu



Apply at the link
on the webpage

Deadline:
April 9, 2023

<https://www.yambo-code.eu/2023/02/18/yambo-school-2023/>



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