

PROGRAM

Monday, May 4th

Tuesday, May 5th

Wednesday, May 6th

8:30

registration

9:00

Paola Alippi
introduction

Elisa Molinari
Exciting graphene
nanosystems

Gianni Jacucci
Autopoiesis & Cognition,
an outstanding outcome
of Phenomenology

9:30

chair: Fabio Affinito

**Luigi Nicolais,
Egidio Longo**
opening address

chair: Daniele Varsano

Annalisa Fasolino
Subbands of new oxide
heterostructures: the
LaAlO₃/SrTiO₃ interface

chair: Claudio Attaccalite

Massimo Altarelli
Theory challenges from X-ray
free-electron lasers

10:00

Angelo Vulpiani
A (random) tour around
quantum mechanics,
condensed matter and
reductionism

Matthias Scheffler
Big data of materials
science – critical role
of the descriptor

Erio Tosatti
Modeling versus realistic
first-principles calculations /
simulations in condensed
matter theory

10:30

Federico Capasso
Structured light with
metasurfaces

Stefano Baroni
What I cannot compute, I do
not understand: fathoming
atomic heat transport from
the struggle to simulate it!

Michele Cascella
closing remarks

11:00

coffee break

coffee break

coffee break

Monday, May 4th

Tuesday, May 5th

11:30

Luciano Pietronero

New metrics for economic complexity: the intangible fitness of countries and complexity of products

Cyrus J. Umrigar

Zero-temperature quantum Monte Carlo methods and the sign problem

12:00

Wanda Andreoni

CO₂ Capture in Amine solutions: an update on modeling and simulations

Stephen Fahy

Ultrafast photoexcitation and decay of coherent phonons

12:30

Annabella Selloni

Water adsorption and oxidation on metal oxides

Sandro Sorella

What about phase separation in the Hubbard model?

13:00

Michele Parrinello

Atomistic modeling of crystal nucleation and growth

Saverio Moroni

Coexistence, interfacial energy and microemulsions of 2D dipolar bosons.

13:30

lunch

lunch

chair: Leonardo Guidoni

chair: Paola Gori-Giorgi

Monday, May 4th

15:00

Ole K. Andersen

Band structure of the purple bronze $\text{LiMo}_6\text{O}_{17}$

15:30

Donald R. Hamann

Ab-initio pseudopotentials: from BHS to ONCVSP

16:00

Steven G. Louie

Electrons and excitons in quasi 2D materials

16:30

Roberto Car

Van der Waals bonded crystals: a challenge for density functional theory

chair: Lilia Boeri

17:00

coffee break

17:30

poster session

20:30

social dinner

Franco Meloni with photo archive by **Raffaele Resta**

Tuesday, May 5th

Who cares about cores?

In this panel discussion, different generations of students and coauthors will briefly illustrate major achievements and anecdotes of their academic/professional activity related to the scientific and/or human interaction with Giovanni Bachelet.

chair: Alessio Filippetti
Ari P. Seitsonen

coffee break

poster session