

5TH ADVANCED SCHOOL ON EXOPLANETARY SCIENCE
Physical and Dynamical Processes of Exoplanetary Systems

May 26 - 30, 2025
Vietri sul Mare, Italy

PROGRAM

Sunday, May 25

- 7:00 pm – 8:00 pm **Welcome cocktail and preregistration**
Lloyd's Baia Hotel

Monday, May 26

- 8:00 am – 9:00 am **Registration**
- 9:00 am – 12:30 pm **Lectures**
- 2:30 pm – 6:30 pm **Lectures**

Tuesday, May 27

- 9:00 am – 12:30 pm **Lectures**
- 2:30 pm – 6:30 pm **Lectures**

Wednesday, May 28

- 9:00 am – 1:30 pm **Lectures**
- 3:00 pm – 7:30 pm **Tour of the archaeological park of Paestum**
- 7:30 pm – 10:30 pm **Social Dinner**

Thursday, May 29

- 9:00 am – 12:30 pm **Lectures**
- 2:30 pm – 6:30 pm **Lectures**

Friday, May 30

- 9:00 am – 12:30 pm **Lectures**
- 2:30 pm – 6:30 pm **Lectures**

5TH ADVANCED SCHOOL ON EXOPLANETARY SCIENCE
Physical and Dynamical Processes of Exoplanetary Systems

May 26 - 30, 2025
Vietri sul Mare, Italy

LECTURE PROGRAM

Monday, May 26

- 9:00 am Lecture #1 by **Julia Venturini**
The core accretion paradigm
- 10:00 am Lecture #1 by **Yamila Miguel**
Interior structure of Gas giants. Applications to radius-mass diagrams, love numbers and constraints from observations
- 11:00 am Coffee break
- 11:30 am Lecture #1 by **Giovanna Tinetti**
TBA
- 12:30 pm - 2:30 pm Lunch and free time
- 2:30 pm Contribution #1 by **TBD**
TBA
- 2:45 pm Contribution #2 by **TBD**
TBA
- 3:00 pm Lecture #1 by **Giuseppe Lodato**
Introduction to planet forming discs: observations of (a) dust morphologies (b) gas kinematics and (3) global properties of discs
- 4:00 pm Coffee break
- 4:30 pm Lecture #1 by **Francesco Marzari**
Planet-planet scattering
- 5:30 pm Lecture #2 by **Julia Venturini**
Solid accretion
- 7:30 pm Dinner and free time

Tuesday, May 27

- 9:00 am Lecture #2 by **Yamila Miguel**
Evolution of Gas giants and Irradiated exoplanets
- 10:00 am Lecture #2 by **Giovanna Tinetti**
TBA
- 11:00 am Coffee break
- 11:30 am Lecture #2 by **Giuseppe Lodato**
Fundamentals of accretion disc theory
- 12:30 pm - 2:30 pm Lunch and free time
- 2:30 pm Contribution #3 by **TBD**
TBA
- 2:45 pm Contribution #4 by **TBD**
TBA
- 3:00 pm Lecture #2 by **Francesco Marzari**
Orbital stability of multi-planet system
- 4:00 pm Coffee break
- 4:30 pm Lecture #3 by **Julia Venturini**
Gas Accretion
- 5:30 pm Lecture #3 by **Yamila Miguel**
Interiors of Icy giants, Neptunes and Sub-Neptunes
- 7:30 pm Dinner and free time

Wednesday, May 28

- 9:30 am Lecture #3 by **Giuseppe Lodato**
Analytical solutions to accretion discs. The spreading ring and self-similar solutions. Steady-state solutions.
- 10:00 am Lecture #3 by **Francesco Marzari**
Planet-star tidal interaction
- 10:30 am Coffee break
- 11:30 am Lecture #3 by **Giovanna Tinetti**
TBA
- 12:30 pm Lecture #4 by **Julia Venturini**
The formation of super-Earths and mini-Neptunes
- 1:30 pm - 2:50 pm Lunch and free time
- 3:00 pm - 7:30 pm Tour of the archaeological park of Paestum:
 - Visit to the ancient Greek temples and the archaeological museum
- 7:30 pm - 10:30 pm Social dinner

Thursday, May 29

- 9:00 am Lecture #4 by **Yamila Miguel**
Interiors of Rocky planets. Applications to mass-radius diagrams
- 10:00 am Lecture #4 by **Giuseppe Lodato**
Energetics of accretion discs, temperature profiles and spectral energy distribution
- 11:00 am Coffee break
- 11:30 am Lecture #5 by **Julia Venturini**
Planet Population Synthesis
- 12:30 pm - 2:30 pm Lunch and free time
- 2:30 pm Contribution #5 by **TBD** *TBA*
- 2:45 pm Contribution #6 by **TBD** *TBA*
- 3:00 pm Lecture #4 by **Giovanna Tinetti** *TBA*
- 4:00 pm Coffee break
- 4:30 pm Lecture #4 by **Francesco Marzari**
Resonances
- 5:30 pm Lecture #5 by **Yamila Miguel**
Interiors of hot rocky planets (Lava planets) and interaction between interior and atmosphere
- 7:30 pm Dinner and free time

Friday, May 30

- 9:00 am Lecture #5 by **Giovanna Tinetti** *TBA*
- 10:00 am Lecture #5 by **Francesco Marzari**
Secular evolution of a multi-planet system
- 11:00 am Coffee break
- 11:30 am Lecture #6 by **Francesco Marzari**
Planet migration by interaction with the disk
- 12:30 pm - 2:30 pm Lunch and free time

- 2:30 pm Contribution #7 by **TBD** *TBA*
- 2:45 pm Contribution #8 by **TBD** *TBA*

- 3:00 pm Lecture #6 by **Giovanna Tinetti** *TBA*
- 4:00 pm Coffee break
- 4:30 pm Lecture #5 by **Giuseppe Lodato**
Aerodynamics of solids and dust particles in discs
- 5:30 pm Lecture #6 by **Giuseppe Lodato**
Advanced topics in disc dynamics: (a) sources of angular momentum transport; (b) stellar interactions and flybys; (c) warped discs and disc tearing.

- 7:30 pm Dinner and free time