# MECHANICS

General: Fundamental physical ideas of Classical Mechanics and their relation with modern research problems.

Basics:

- Euler-Lagrange equations
- Variational principles
- Symmetries and conservation of physical quantities
- Hamilton's equations
- Dynamics in phase space
- Liouville's theorem

Various topics are chosen each year from one of the following fields:

- Celestial mechanics
- Quantum mechanics
- Normal modes
- Classical theory of fields
- Dynamics of continuous media and fluid mechanics
- Rigid body mechanics
- Stochastic dynamics