Classical Gravitation

ECTS : 4

Volume horaire : 30

Description du contenu de l'enseignement :

1. Reminder on basic mechanics :
- Galilean reference frame
- Newton's law
- energy (kinetic, potential...)
- body in rotation (kinetic moment etc...)
2. The problem has two bodies :
- formalization (absolute and relative movement)
- polar coordinates
- body trajectories (study of the conic in detail)
- Kepler's law
3. Introduction to the problem with N bodies (very short, will be treated in detail in semester 2)

Compétence à acquérir :

Gravity is one of the key elements for understanding the properties and the evolution of the universe. From a planetary orbit to the one of a star in its galaxy, gravitation is one of the most important engines in the Universe.

The objective of this course is to study in detail the Newtonian gravitation around the two-body problem up to the N-body problem.

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