# TITLE: Attosecond pulses and attosecond physics

**ABSTRACT:**

The interaction of atoms with intense laser radiation leads to the generation of high-order harmonics of the laser field. In the time domain, this corresponds to a train of pulses in the extreme ultraviolet range and with attosecond duration. The first lecture will introduce the physics of high-order harmonic generation and attosecond pulses and discuss the performances of the attosecond sources with respect to photon energy, pulse energy and repetition rate.

The attosecond time scale is that of the electron motion in atoms and molecules. The photon energy of the attosecond pulses is generally above the ionization threhold, thus probing the first valence shells. Attosecond light pulses are used to study, for example, the dynamics of atomic or molecular photoionization. The second lecture will present an interferometric method developed for measuring attosecond pulses and discuss some of the applications, in particular concerning photoionization dynamics.