



AUDITORIUM – Institut d'Optique  
2 Av Fresnel, 91127 Palaiseau

université  
PARIS-SACLAY

Institute for the  
Sciences of Light

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# Colloquium ISL

## Attosecond pulses for studying ultrafast electron dynamics

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<https://www.atomic.physics.lu.se/research/attosecond-physics-from-lasers-to-applications/group-members/anne-lhuillier/>

Extreme Ultraviolet light sources based on high-order harmonic generation in gases are now used in many areas of science. The radiation consists of a train of extremely short light bursts, in the 100-attosecond range, allowing for outstanding temporal resolution. This presentation will give a short historical perspective on this field of research and an introduction to the physics of these XUV sources.

Attosecond pulses have enabled the study of photoionization of atoms and molecules in a completely new way. Through the availability of synchronized probe fields and interferometric measurements, it has become possible to measure the incredibly small-time delay in photoionization, a concept introduced by E. Wigner in 1955, and to characterize the quantum state of a photoelectron.