



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

université  
PARIS-SACLAY

Institute for the  
Sciences of Light

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AT 11:00 A.M.

# Colloquium ISL

## Bright and Fast: Lasers to Capture the Dance Between Electrons and Nuclei in Molecular Systems

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Photoionization of atoms, molecules, and small complexes creates a fundamental testing ground to understand better quantum mechanical phenomena arising from the interaction of photon with matter. With the ultrafast ( $\sim 10^{-15}$  s) light sources, such as lab-based tabletop lasers and facility-based free electron lasers (FELs), one can investigate molecular processes in the time domain, thus mapping out their evolution. In that regard, it is possible to “make a molecular movie” of ultrafast reaction dynamics. In the seminar, we will present some of our work using photons in the XUV and X-ray regime from the Linac Coherent Light Source (LCLS) FEL at SLAC National Laboratory as well as the FLASH FEL in Hamburg, Germany.