



## SEMINAIRE SPAM / LFP



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**Bâtiment 522 - Salle 136**

### «Intracycle Interference in Above-Threshold Ionization»

Tunneling ionization is recently attracting increasing interest as a probe of the atomic and molecular structure. In few-cycle pulses, tunneling occurs practically only within a single cycle. In such a case, the interference of the two bursts with the same final momentum gives rise to features in photoelectron energy and momentum distribution, which have recently been studied as temporal double-slit interference. On the other hand, the above-threshold ionization (ATI) peaks can be themselves viewed as an interference pattern formed by electron bursts repeated each optical cycle. The difference and interplay of these *intra-* and *intercycle* interferences has not been clearly presented so far, to our knowledge. In this work, we theoretically study the contribution from these two kinds of interferences to ATI spectra by multicycle laser pulses. We show that the intracycle interference is imprinted as a modulation envelope of peak heights in the discrete multiphoton peaks formed by the intercycle interference. This modulation can be clearly seen in the dependence of the ATI spectra on the laser wavelength, and is shifted to lower energy by the effect of the long Coulomb tail of the atomic potential.

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