

Abstract for an Invited Paper  
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**Generation and control of attosecond pulses.**

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Generating attosecond ( $1 \text{ as} = 10^{-18} \text{ s}$ ) pulses both as trains of pulses or as isolated sub-femtosecond pulses is now possible with high order harmonic generation combined with temporal confinement techniques. As this source gets available, diverse applications of these pulses are emerging. To fulfil the requirements imposed by these applications (tunability, bandwidth, pulse duration and so on), the attosecond pulses have to be controlled. During this talk I will present how manipulating the polarization of an intense short pulse allows us to generate isolated attosecond pulses (or short burst of attosecond pulses) and what are the required characteristics for the fundamental pulse. I will describe the opportunities offered by this polarization gating approach in terms of control of the attosecond pulses, especially for their tunability, duration and bandwidth of the attosecond pulse or pulse train. Using these pulses for performing time resolved experiment with attosecond accuracy is also a challenge and I will present some tools that we developed for high resolution pump-probe experiments like for instance a simple ultra-stable interferometer that offers a temporal resolution of few as.