

# Ab initio study of high-order harmonics and isolated attosecond pulses from a solid target: Two-color pulse impacts

*Saturday, 7 November 2020 11:00 (20 minutes)*

On the basis of real-time *ab initio* calculations, we study the non-perturbative interaction of two-color laser pulses with MgO crystal in the strong-field regime to generate isolated attosecond pulse (IAP) from high-harmonic emissions from MgO crystal.

In this regard, we examine the impact of incident pulse characteristics such as its shape, intensity, and ellipticity as well as the consequence of the crystal anisotropy on the emitted harmonics and their corresponding IAPs.

Our calculations predict the creation of IAPs with a duration of  $\sim 300$  attoseconds; in addition, using elliptical driving pulses, the generation of elliptical IAPs is shown.

Our work prepares future all solid-state compact optical devices offering perspectives beyond traditional IAP emitted from atoms.

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**Session Classification:** Talks from participants: Laser and Accelerators (de/engl)