

**TWO-COLOR PHOTOIONIZATION IN XUV-FEL AND
VISIBLE LASER FIELDS**

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We present results from both experiment and theory on ionization of atomic helium by femtosecond extreme-ultraviolet (XUV) pulses from the Free Electron Laser at DESY. We shall discuss the conditions for observing both single-color multiphoton ionization or multicolor ionization when combining the XFEL with intense light pulses from a synchronized visible Nd-YLF laser. In the latter case, sidebands appear in the photoelectron spectra depending on the spatial and temporal overlaps of the two pulses. Their intensity exhibits a characteristic dependence on the relative time delay between the ionizing and the dressing pulses and provides an inherent time marker for time-resolved pump-probe experiments. The measurement of the sidebands allows for a direct analysis of two-photon ionization, free from processes related to interference between multiple quantum paths.