

## **Rabi dynamics driven by a seeded FEL at XUV-wavelengths**

Short-wavelength Rabi oscillations are observed in helium atoms using intense pulses from a seeded free-electron laser. Single-cycle Rabi dynamics take place on the ultra-fast timescale in the extreme-ultraviolet regime. An analytical model, based on a Dyson series of the Rabi oscillating two states, is developed to quantitatively explain interference effects of ejected photoelectrons and non-linear decay mechanisms of the short-wavelength Rabi oscillations.

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