

Femtosecond quantum dynamics: from electronic coherences of weakly interacting systems to strongly correlated ionization

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Electronic Wavepackets have been probed implementing a phase cycling scheme into a femtosecond pump-probe setup. This allows us to efficiently isolate multiple coherences in an ensemble of alkali atoms. On the other hand, strongly interacting helium atoms are probed employing XUV free electron laser radiation in order to study collective excitation and ionization dynamics.