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Using Ultrafast Pulse Shaping to Probe Electronic Interference in Strong Field Ionization[1] ARTHUR ZHAO, PÉTER SÁNDOR, Dept. of Physics and Astronomy, Stony Brook University, TAMÁS ROZGONYI, Hungarian Academy of Sciences, THOMAS WEINACHT, Dept. of Physics and Astronomy, Stony Brook University — We make use of shaped ultrafast laser pulses, velocity map imaging and coincidence detection to study electron dynamics in Strong Field Ionization (SFI) of small molecules. In particular, we consider the role of interference between different pathways during ionization. In one experiment, the molecule is ionized with a phase locked pulse pair. We study the ionization yield as a function of the delay and the relative phase between pulses, and interpret its variation in terms of strong field laser molecule phase matching.

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