

Supplementary Material

Supplementary material: Molecular fragmentation as a way to reveal early electron dynamics induced by attosecond pulses

Jorge Delgado^{a†}, Manuel Lara-Astiaso^{b†}, Jesús González-Vázquez Delgado^b, Piero Decleva Delgado^c, Alicia Palacios^{*b,d}, and Fernando Martín^{a,b,e}

^a Instituto Madrileño de Estudios Avanzados en Nanociencia, 28049 Madrid, Spain.

^b Departamento de Química, Modulo 13, Universidad Autónoma de Madrid, 28049 Madrid, Spain

^c Dipartimento di Scienze Chimiche e Farmaceutiche, Università di Trieste, 34127 Trieste, Italy

^d Institute for Advanced Research in Chemical Sciences (IAdChem), Universidad Autónoma de Madrid, 28049 Madrid, Spain

^e Condensed Matter Physics Center (IFIMAC), Universidad Autónoma de Madrid, 28049 Madrid, Spain

† These authors contributed equally to this work.

*E-mail: alicia.palacios@uam.es

Pulse-shaped hole densities for ionized glycine

The time evolution of the hole densities generated by three different pulses after ionization of glycine are provided in the movie files **glycine_p12.avi**, **glycine_p16.avi** and **glycine_p20.avi**. These movies present a finer time scan of the time-evolving hole densities shown in figure 2 of the main manuscript, i.e. the time evolution of the hole densities generated by XUV pulses with a central energy of 12, 16 and 20 eV, respectively. We employed Gaussian-shaped pulses with a full-width half-maximum (FWHM) of 2.67 eV, which corresponds to an ultrashort pulse duration of 3.5 fs. Further details are given in the main manuscript.