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Attosecond-Time Resolved Fano Resonances M. WICKENHAUSER, J. BURGDÖFER, Institute for Theoretical Physics, Vienna University of Technology, Austria, C.D. LIN, Phys. Dept., Kansas State University, M. DRESHER, Faculty of Physics, University of Bielefeld, Bielefeld, Germany, F. KRAUSZ, Institute for Photonics, Vienna University of Technology, Austria and Max-Planck-Institute for Quantum Optics, Garching, Germany — Recent advances in the generation of sub-fs XUV pulses and attosecond metrology have opened up the possibility to trace the time evolution of electronic wavepackets inside atoms in pump-probe experiments. We investigate the feasibility of observing the build-up of a Fano resonance in the time domain with attosecond resolution [1]. Excitation with the pump pulse opens two interfering paths from the ground state to the continuum. The time evolution of the coherent superposition of resonant state and continuum is mapped onto a modulation of the electron spectrum as a function of the time delay between pump and probe pulse. First results for super-Coster Kronig transitions with lifetimes of the order of 400 asec will be presented.
[1] M. Wickenhauser et al., PRL **94** 023002 (2005).

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