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How to probe the time evolution of a Fano resonance? W.-C. CHU, C.D. LIN, Department of Physics, Kansas State University, Manhattan, Kansas 66506 — We study the autoionization process in the time domain of a Fano resonance. A pump beam is used to generate a bound state and the nearly background continuum. The time evolution of the resulting electron wave packet till the full decay of the bound state is investigated. Using the $2s2p(^1P^o)$ resonance in neutral helium as an example, we study how the wave packet can be probed by ionizing the remaining bound $2s2p(^1P^o)$ component or by ionizing the inner electron of the whole wave packet. We show that the lifetime of the resonance can be obtained from the total ionization yield vs the time delay but the q-parameter can be determined from the electron spectra.

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