

Abstract Submitted
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Attosecond pump-probe of doubly excited states in helium JOHANNES FEIST, ITAMP, Harvard-Smithsonian Center for Astrophysics, USA, STEFAN NAGELE, JOACHIM BURGDÖRFER, Institute for Theoretical Physics, Vienna University of Technology, Austria, EU, CHRISTOPHER TICKNOR, LEE A. COLLINS, Theoretical Division, Los Alamos National Laboratory, USA, BARRY I. SCHNEIDER, Office of Cyber-Infrastructure, National Science Foundation, USA — Pump-probe experiments using two attosecond light pulses promise to provide unprecedented temporal resolution of electronic wave packet dynamics and have thus been called the “holy grail” of attosecond physics. Their experimental realization has up to now been out of experimental reach because of the limited intensity of attosecond sources. We study such setups for probing doubly excited states of helium, which present a prototypical example for correlated electron dynamics. We will present schemes to achieve sufficient yields for the experimental realization of such a setup. Furthermore, we will discuss the novel information that can be gained about the dynamics of the system and that is not available in conventional spectroscopy.

Johannes Feist
ITAMP, Harvard-Smithsonian Center for Astrophysics, USA

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