

UNL Department of Physics and Astronomy presents:

New Regimes in Strong Laser Matter Interaction

PRESENTED BY

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THURSDAY
FEBRUARY 9
4:00 PM
IN JH 136

Refreshments will be served in the JH 1st Floor Vending Area at 3:30

ABSTRACT

Attosecond light pulses are the shortest events generated to date and have a broad range of applications from nano-size tomographic imaging to quantum time correlations. Through the use of common-path interferometry we are able to realize a self-referencing Young double slit interferometer for attosecond pulses with zeptosecond precision and control. We show that this great stability is due to the quantum equivalency. The interferometer can be controlled with sub-attosecond resolution and can be extended to even zeptoseconds. Energetically, we are studying electronic emission from nanoparticles with tunable optical properties which yields a much different energetics compared to atoms, molecules, or solids. To this end, we have developed a new detection system that has revealed novel electron dynamics in the presence of the Coulomb and laser fields.

