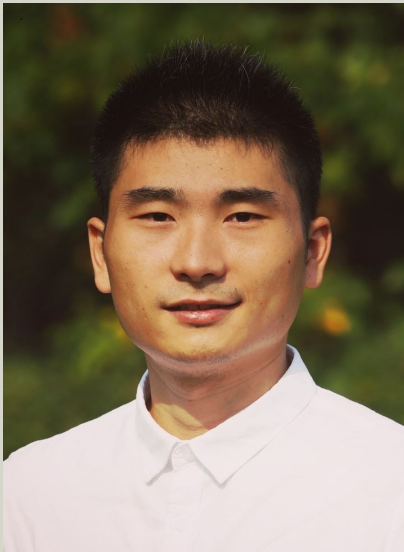


UNL Department of Physics and Astronomy presents:

Circular Polarization: From Strong-Field Physics to Attosecond Science

PRESENTED BY
MENG HAN

Kansas
State
University



THURSDAY
APRIL 11
4:00 PM
IN JH 136

ABSTRACT

Attosecond time-resolved coincidence spectroscopy combined with circularly polarized attosecond light pulses is opening many interesting perspectives. In this talk, I will discuss how to easily generate and fully characterize the circularly polarized attosecond light pulses with a single, controllable helicity. Applying this attosecond light source into atomic systems, we observed a very strong circular dichroism of photoelectron vortices, both in the amplitude (up to 35%) and in the phase delays (up to 250 as) for argon atoms, and we further experimentally separated the Wigner and continuum-continuum delays (a longstanding challenge in attosecond science) in helium atoms. In molecular systems, we resolved the forward-backward phase asymmetry in photoelectron circular dichroism (PECD) of chiral molecules by coincidence measurements. Transferring our methods from table-top HHG-based experiments to large facilities, such as free-electron lasers, it is more promising in measuring site- and element-specific dynamics in complex systems.