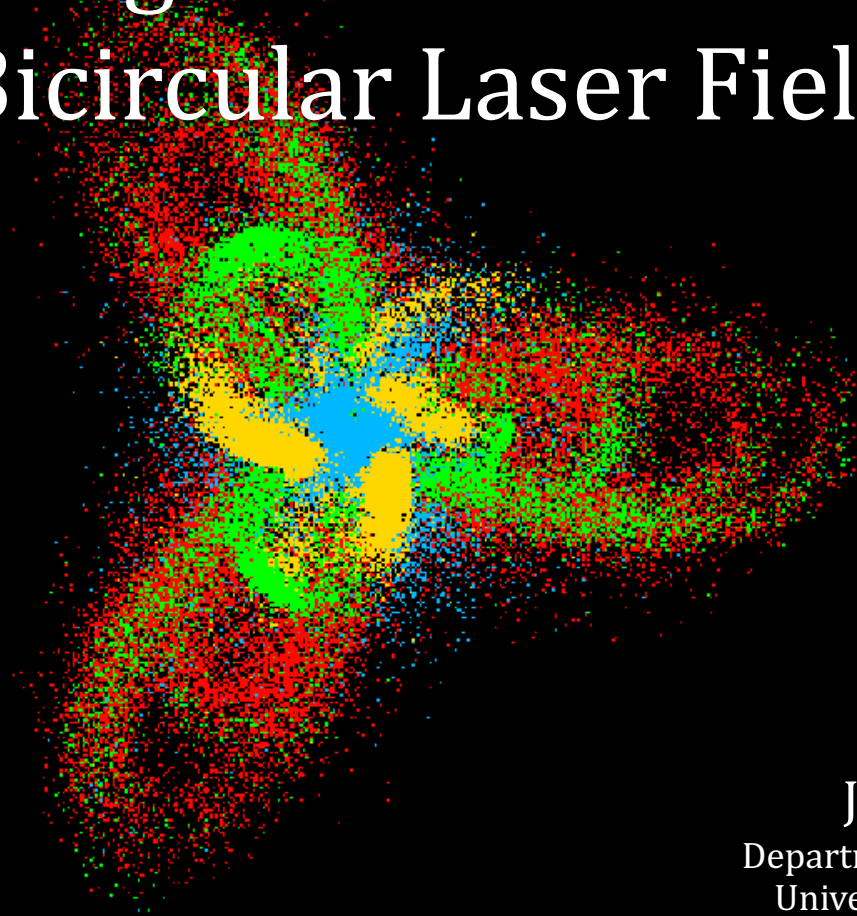


# Strong-Field Ionization in Bicircular Laser Fields



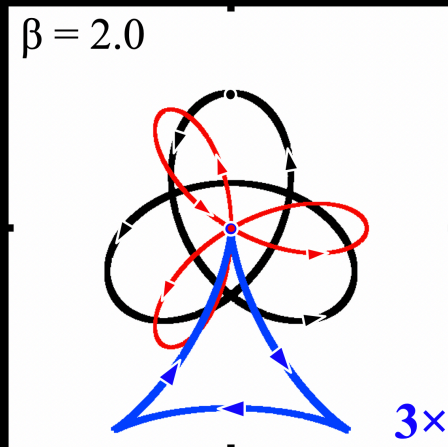
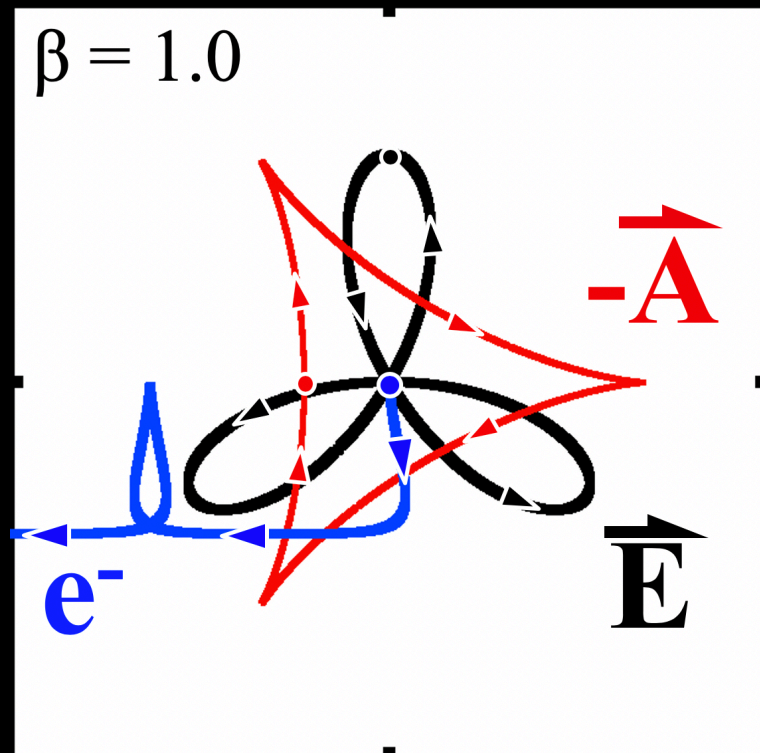
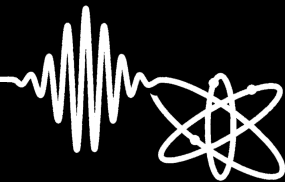
APS March Meeting

Denver, CO  
6 March 2020

Jan L. Chaloupka

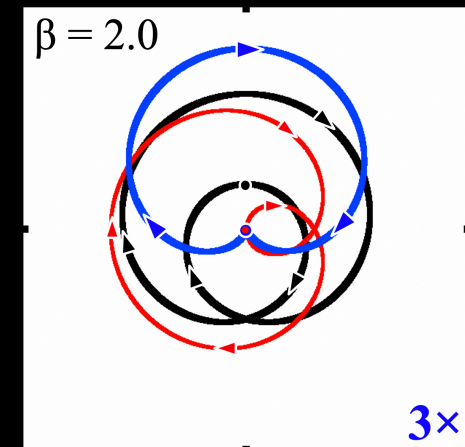
Department of Physics & Astronomy  
University of Northern Colorado

# $2\omega:\omega$ bicircular fields & returning trajectories

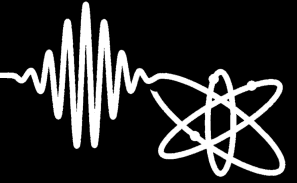


counterrotating  
(release at max field)

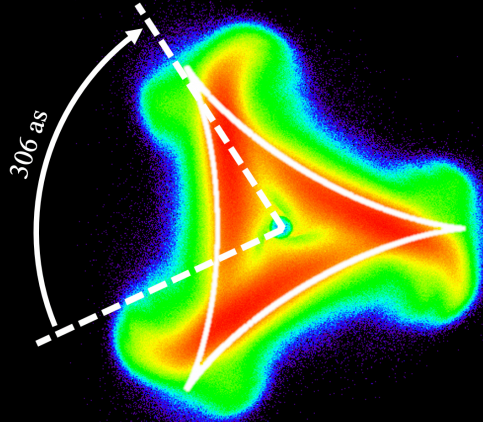
corotating  
(release at min field)



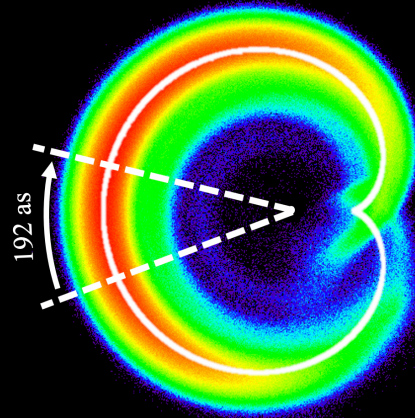
# “attoclock” reveals effect of Coulomb potential



counterrotating



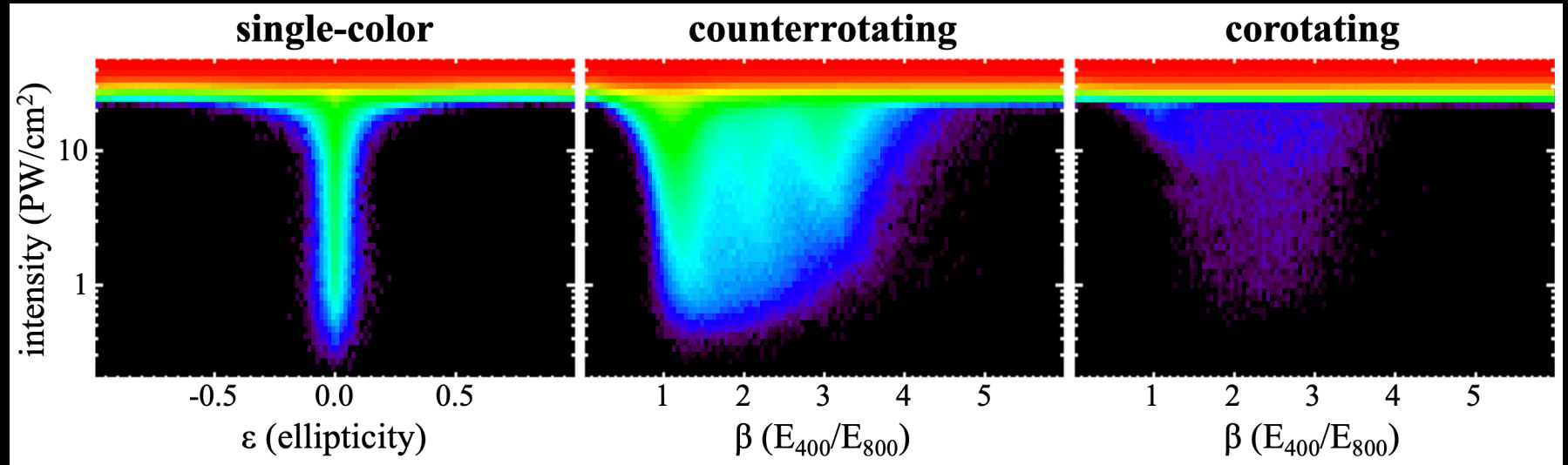
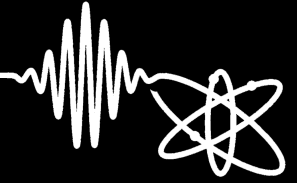
corotating



1 a.u.

a measurable delay in the electron momentum distributions  
is a result of the electron's interaction with the Coulomb potential

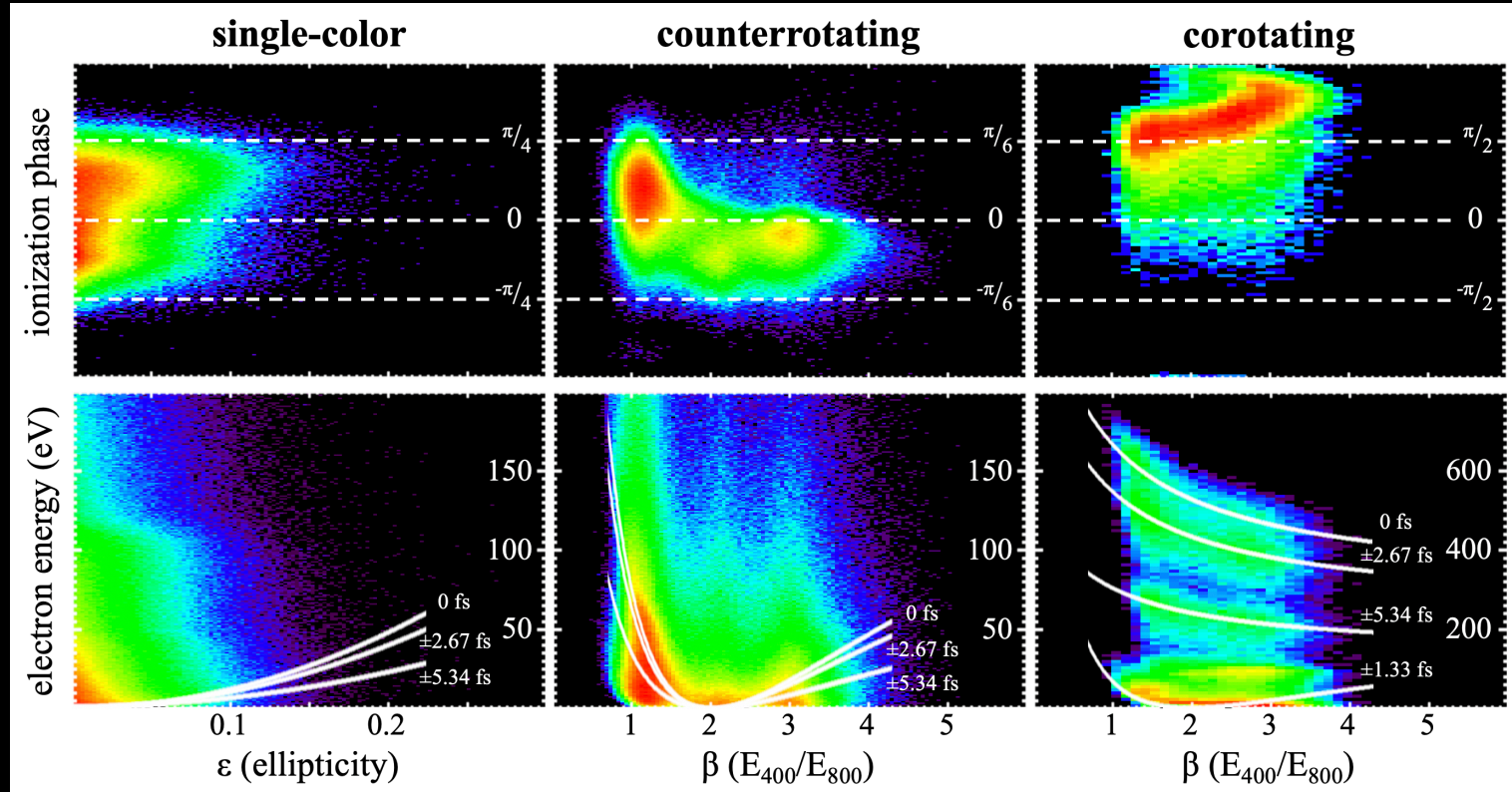
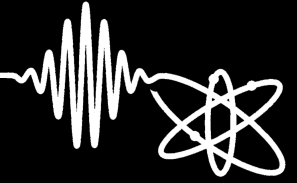
# non-sequential double ionization yields



the iconic NSDI “knee” shows dependence on ellipticity,  
and exists for a broad range of field amplitude ratios

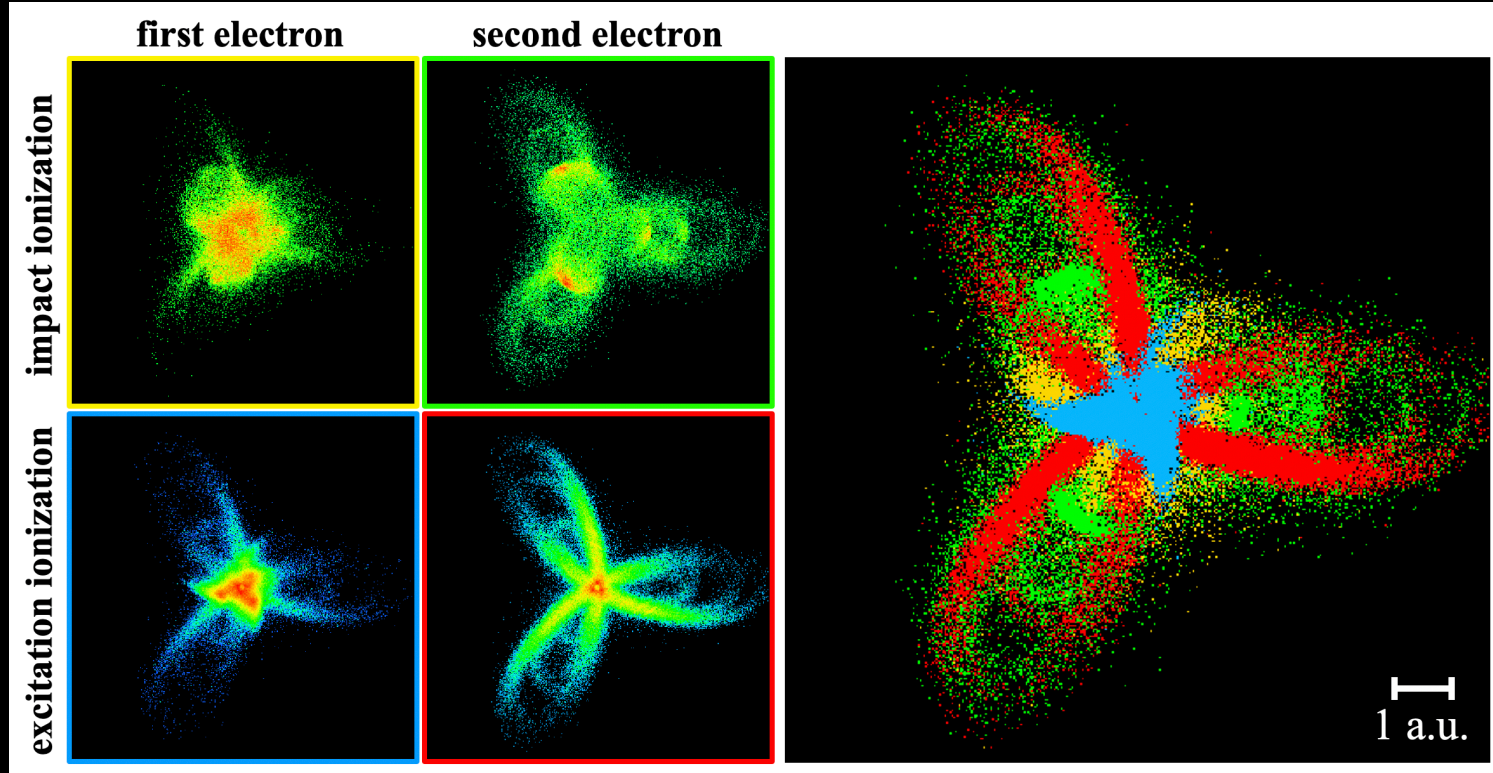
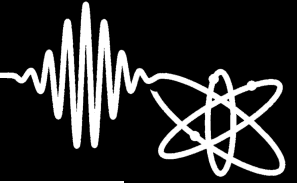


# double ionization phase & energy



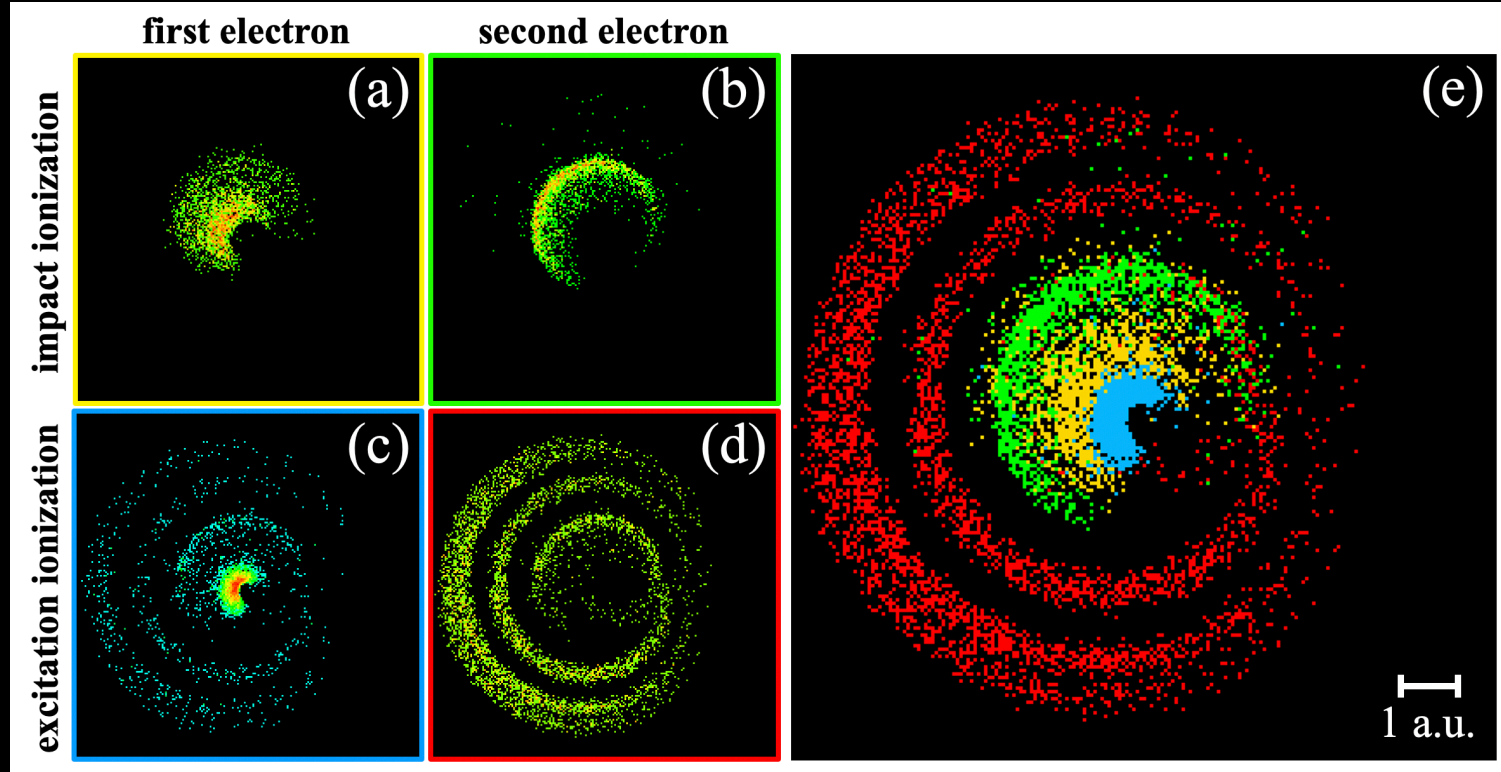
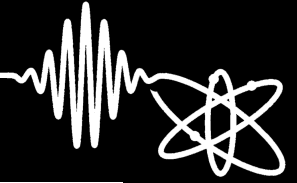
# electron momenta & ionization pathways

counterrotating

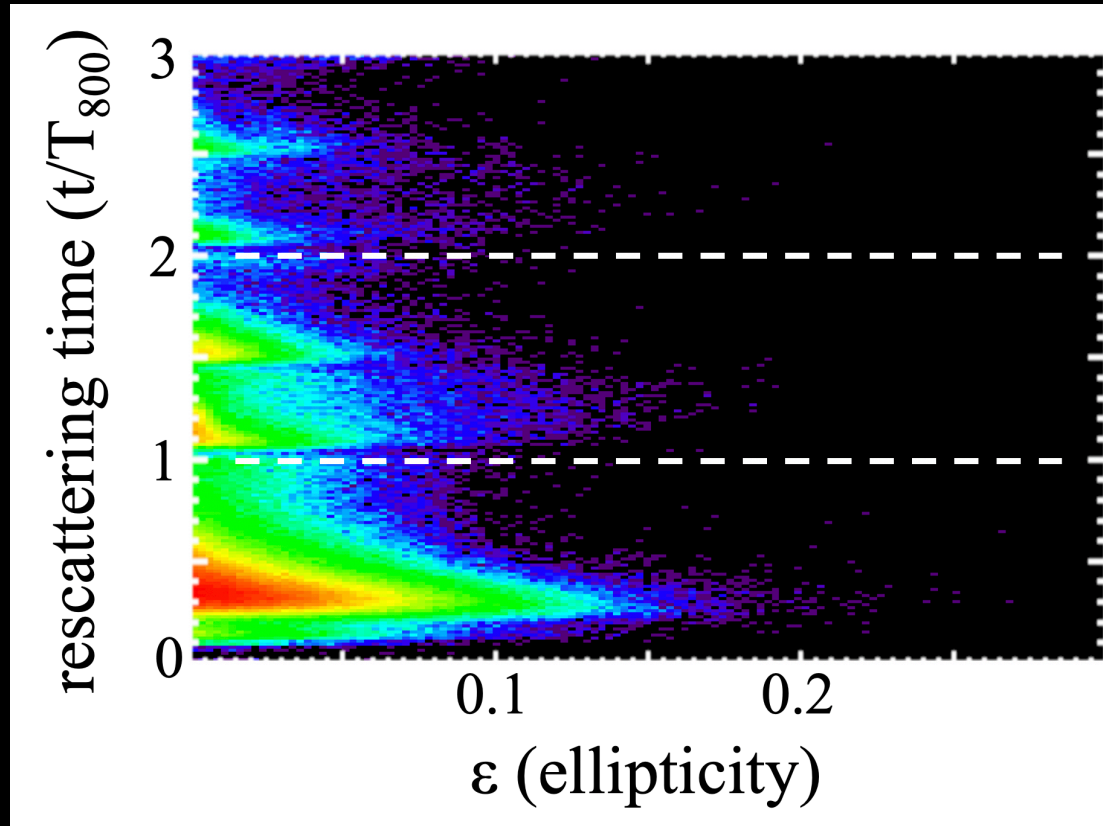
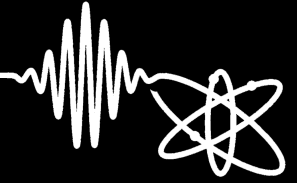


# electron momenta & ionization pathways

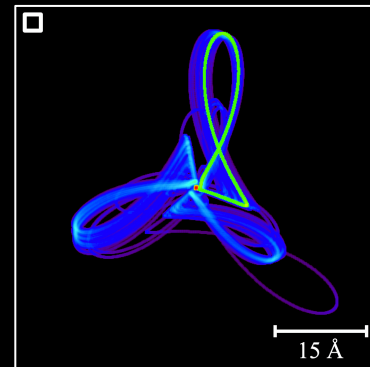
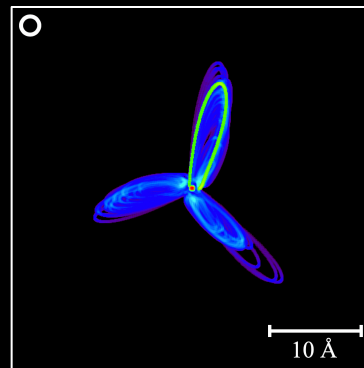
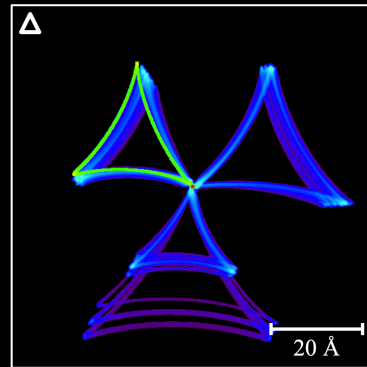
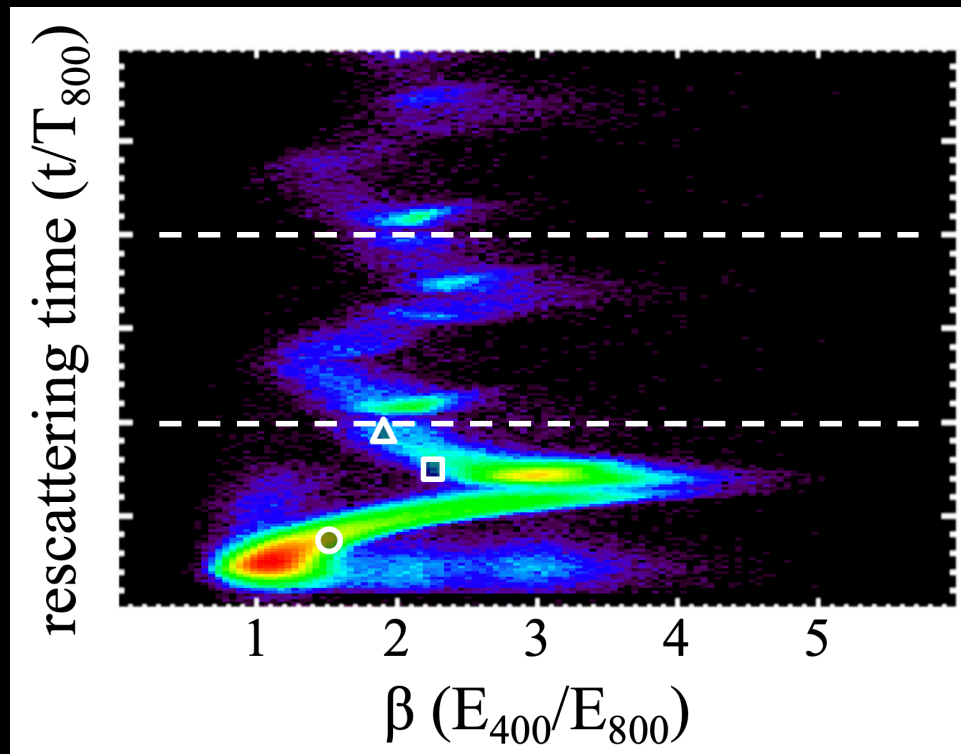
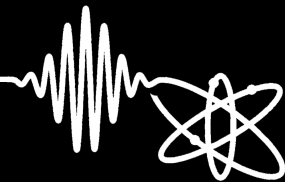
corotating



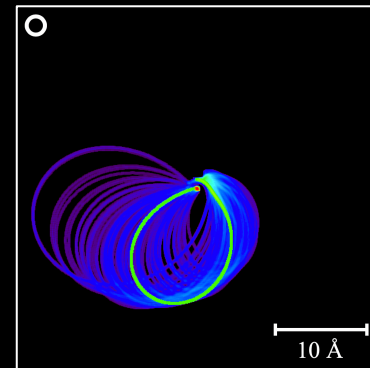
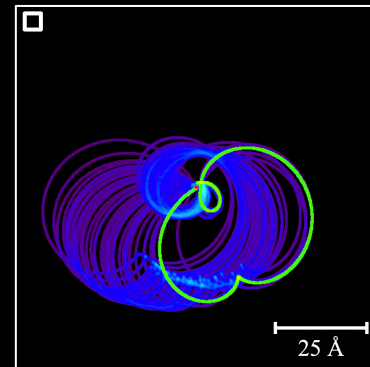
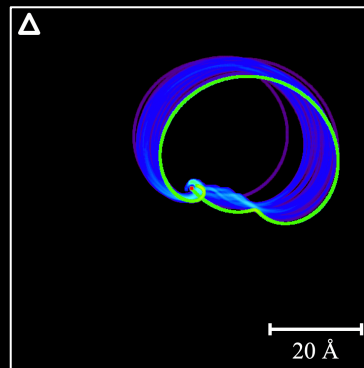
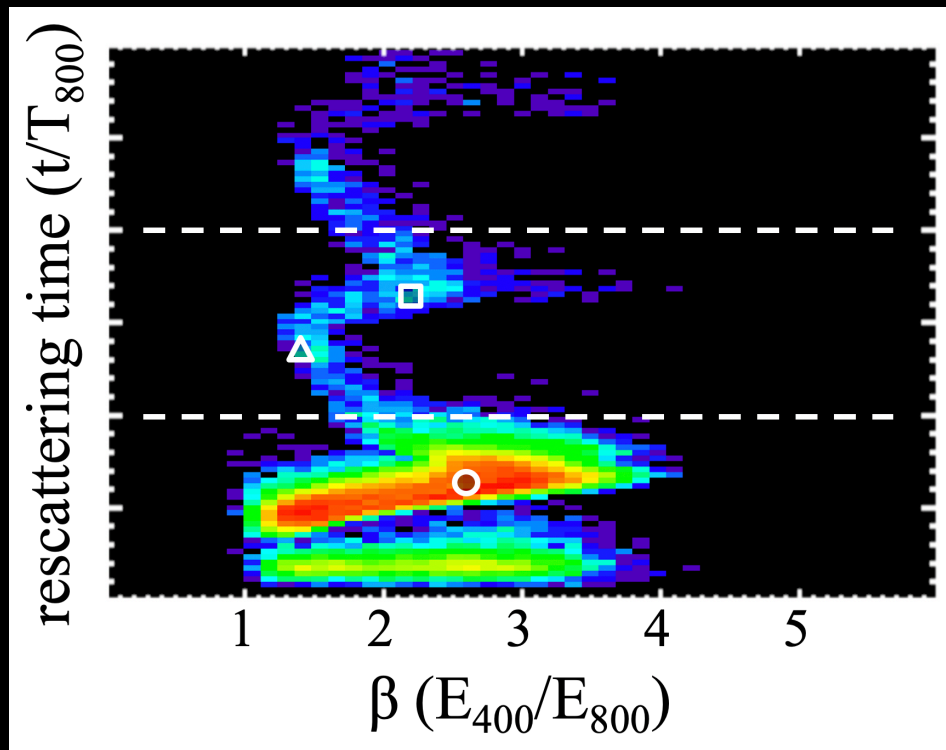
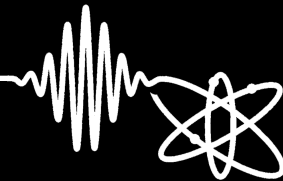
# rescattering timing with single-color fields



# rescattering timing with counterrotating fields

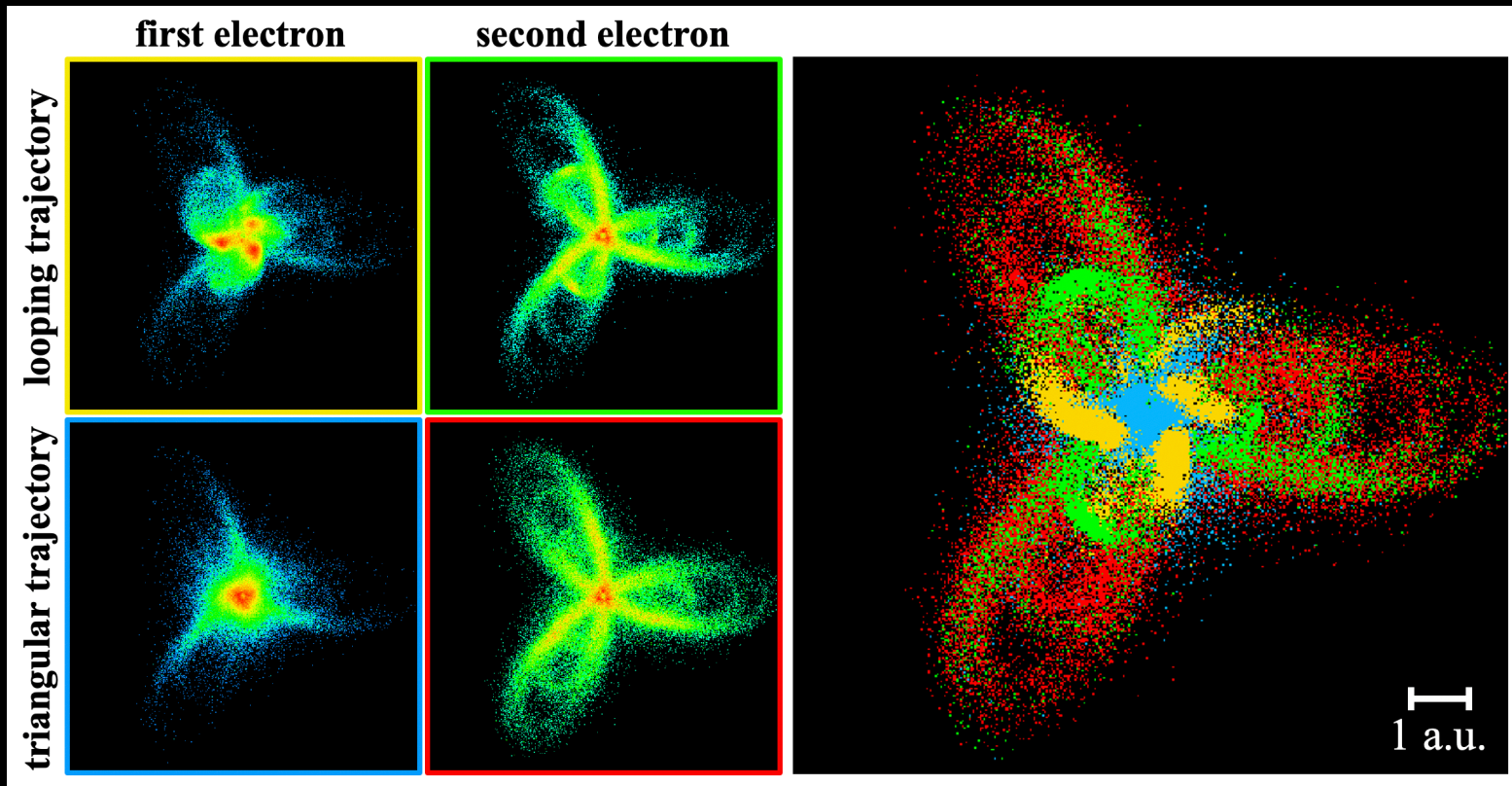
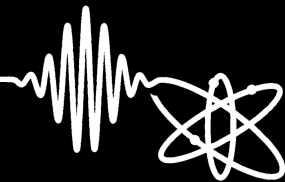


# rescattering timing with corotating fields





# electron momenta & rescattering trajectories





thank you!

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