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POS-E39 – Photoelectron distributions of synthetically chiral light

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Chiral enantiomers are notoriously difficult to differentiate as they have the same chemical and physical properties. Circularly polarized light has been shown to be able to distinguish between them, but the sensitivity is low, on the order of a few percent signal difference. However, in 2019 [1], an ultrafast multi-pulse scheme has been developed which can theoretically elicit responses of up to 100% signal difference between enantiomers, a remarkable jump from the past. This technique relies on measuring the harmonics produced by the chiral molecules. Our work instead focuses on measuring photoelectrons produced by this pulse scheme, comparing targets of increasing complexity, from simple atoms to chiral molecules.

[1] Ayuso et al, Nature Photonics, 13, 866–871, (2019)

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