# CAN PHOTOELECTRON CIRCULAR DICHROISM WORK FOR CHIRAL ANIONS?

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Photoelectron Circular Dichroism (PECD) is a method of chiral discrimination, which can aid in our fundamental understanding of electron dynamics and holds promise for future analytical techniques of chiral compounds. In PECD, ionization of a non-racemic sample by circularly polarized light results in a forward-backward asymmetry of the photoelectron angular distribution. This technique has significant advantages over other optical CD methods, such as absorption circular dichroism, as sensitivity to the molecular chirality can manifest within the electron-dipole approximation, bypassing the need for observation of weak interactions with a molecule's magnetic moment. PECD as it pertains to neutral chiral species has flourished, evident by the many theoretical and experimental works now available. However, PECD of anions has yet to come to fruition. The use of anions for this technique would provide benefits such as mass-selectivity and eliminating the need for X-ray based ionization sources. Also, it is expected that anion PECD would provide insights into the specific role of long-range and short-range forces in the PECD effect. As such, this talk will detail the progress made towards achieving PECD for anions. An overview of the different experimental approaches attempted and considerations of the inherent differences between PECD of neutrals and anions will be included. This discussion will provide the necessary context to answer the question: Can anion PECD work?