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Flavor decomposition with precision pion and kaon cross sections

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Key properties of the nucleon are encoded in the correlation between their longitudinal momentum and their transverse position, such as the orbital angular momentum. This correlation is expressed through Generalized Parton Distributions (GPDs), which can be understood as spatial densities at different values of the longitudinal momentum of the quark. Validation of our understanding of hard exclusive reactions (π^+, K^+, π^0, γ) is an essential aspect towards such 3D hadron imaging and potential future flavor decomposition. The key to extracting GPDs from experiment is QCD factorization theorems. To validate the meson factorization theorems and potentially extract flavor separated GPDs from experiment, one has measure the separated longitudinal and transverse cross sections and their t and Q^2 dependencies. Recent data and prospects for deep exclusive pion, both charged and neutral, and kaon electroproduction are presented, which conceptually would allow for flavor separations.

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