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Single diffractive hard exclusive processes for the study of generalized parton distributions

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Generalized parton distributions (GPDs) are important non-perturbative functions that provide tomographic images of partonic structures of hadrons. We introduce a type of exclusive processes for a better study of GPDs, which we refer to as single diffractive hard exclusive processes (SDHEPs), and give a general proof for their factorization into GPDs. We demonstrate that the SDHEP is not only sufficiently generic to cover all the known processes for extracting GPDs, but also well motivated for the search of new processes for the study of GPDs. We also examine the sensitivity of the SDHEP to the parton momentum fraction x dependence of GPDs, by examining two processes that can be readily measured at J-PARC and JLab, respectively.

Submitted on behalf of a Collaboration?

No

Participate in poster competition?

No

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