

Pion GPDs: Constraints, modelling, and experimental access

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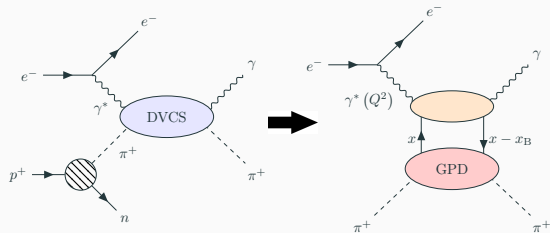
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Work's incentives

Studying the 3D structure of hadrons in terms of its fundamental constituents is of utmost importance to shed light on QCD's IR regime.

Amongst all, the π 's (N-G bosons) play a crucial role. [EPJA:10(5)2019]

Sullivan process [PRD:1732-1737(5)1972]



Used for π -EFFs.

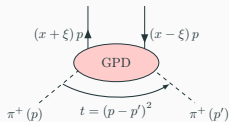
[PRC:4(78)2008]

**What about
GPDs?**

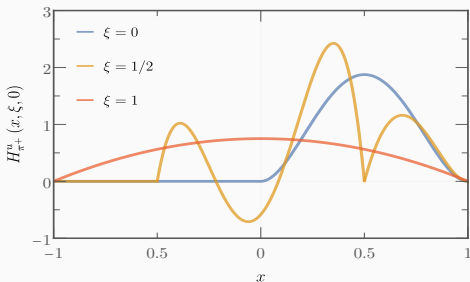
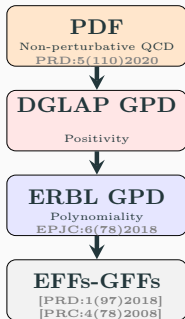
One pion exchange approximation: [EPJC:179-192(58)2008]

- $-t < 0, 6 \text{ GeV}^2$
 - $\sigma_L \gg \sigma_{\perp}$
- } Met at EIC [phys.ins-det/2103.05419]

Positivity-saturated pion GPDs

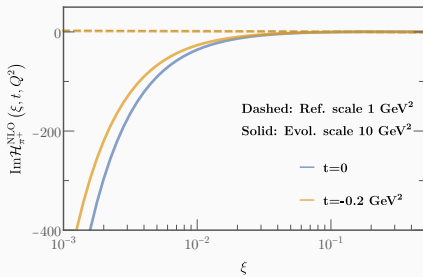
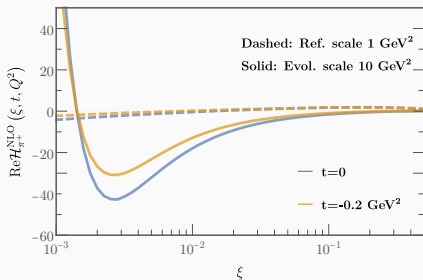
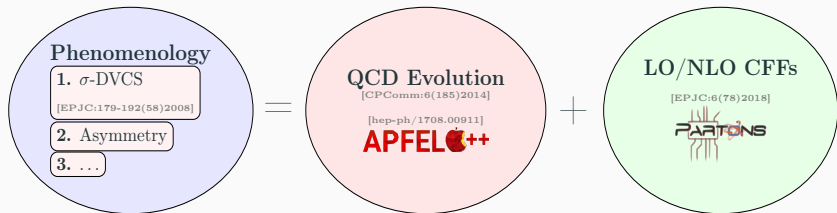


GPD properties			
Support PLB:3-4(428)1998	✓	Positivity PRD:114015(65)2002 EPJC:1(8)1999	✓
Polynomiality JPG:7(24)1998 PLB:1-2(449)1999	✓	Soft-pion NPB:1-2(555)1999 PLB:190(741)2015	✓



RESULT: FIRST Pion GPD model fulfilling all of the theoretical constraints by construction: suitable for phenomenology!

DVCS Compton Form Factors (CFFs)



PHENOMENOLOGY COMING UP VERY SOON!