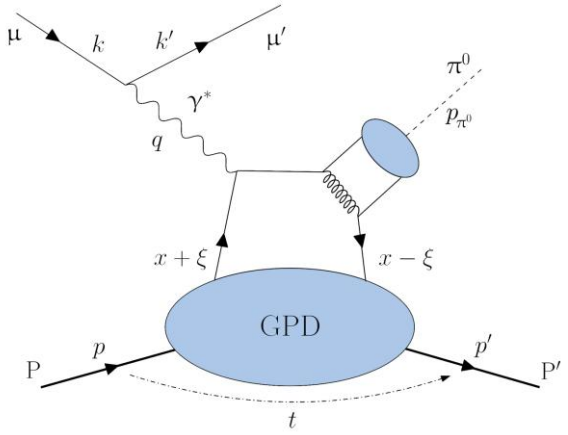
Exclusive π^0 from COMPASS

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Exclusive π^0 from COMPASS

- 2016-2017 data
- 160GeV muon beam
- Unpolarized target



$\gamma^* p$ cross section

$$\frac{d\sigma^{\gamma^* p}}{dt d\phi} = \frac{1}{2\pi}\left[\varepsilon\frac{d\sigma_L}{dt} + \frac{d\sigma_T}{dt} + \varepsilon\cos(2\phi)\frac{d\sigma_{TT}}{dt} + \sqrt{2\varepsilon(1+\varepsilon)}\cos(\phi)\frac{d\sigma_{LT}}{dt}\right]$$

Relation of cross section and GPD

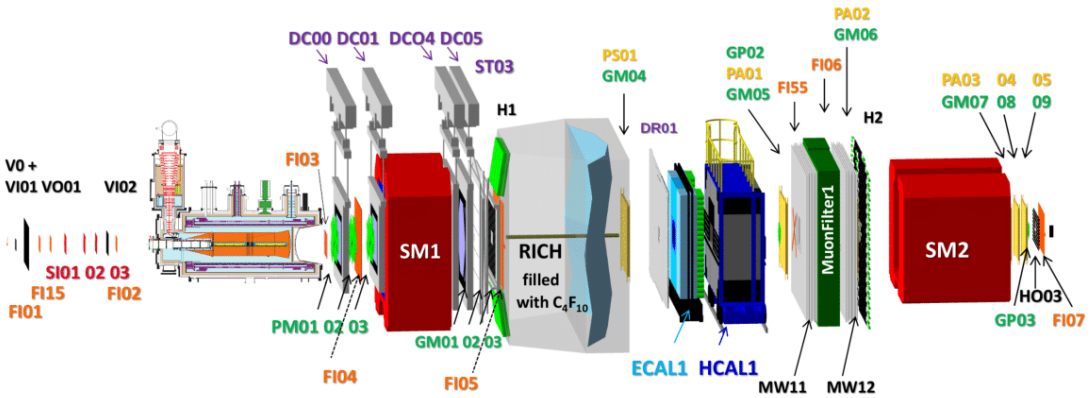
$$\frac{d\sigma_L}{dt} \propto \left[(1-\xi^2)\left|\langle\widetilde{H}\rangle\right|^2 - 2\xi^2\,\mathrm{Re}\left[\langle\widetilde{H}\rangle^*\langle\widetilde{E}\rangle\right] - \frac{t}{4m_p^2}\xi^2\left|\langle\widetilde{E}\rangle\right|^2\right]$$

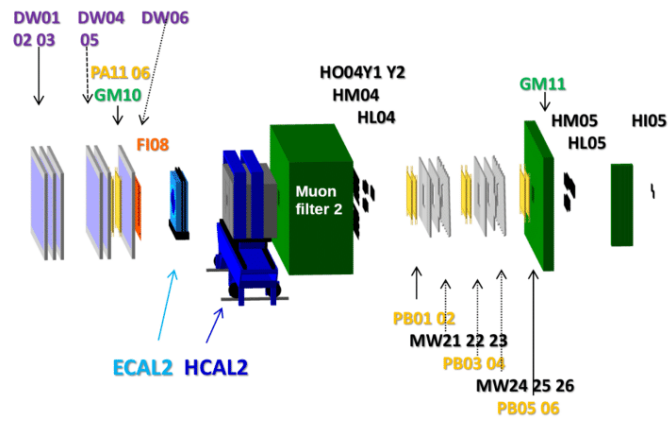
$$\frac{d\sigma_T}{dt} \propto \left[(1-\xi^2)\left|\langle H_T\rangle\right|^2 - \frac{t'}{8m_p^2}\left|\langle\overline{E}_T\rangle\right|^2\right],$$

$$\frac{d\sigma_{TT}}{dt} \propto \frac{t'}{16m_p^2}\left|\langle\overline{E}_T\rangle\right|^2,$$

$$\frac{d\sigma_{LT}}{dt} \propto \xi\sqrt{1-\xi^2}\sqrt{-t'}\;\mathrm{Re}\left[\langle H_T\rangle^*\langle\widetilde{E}\rangle\right],$$

$$\frac{d\sigma_{LT'}}{dt} \propto \xi\sqrt{1-\xi^2}\sqrt{-t'}\;\mathrm{Im}\left[\langle H_T\rangle^*\langle\widetilde{E}\rangle\right].$$

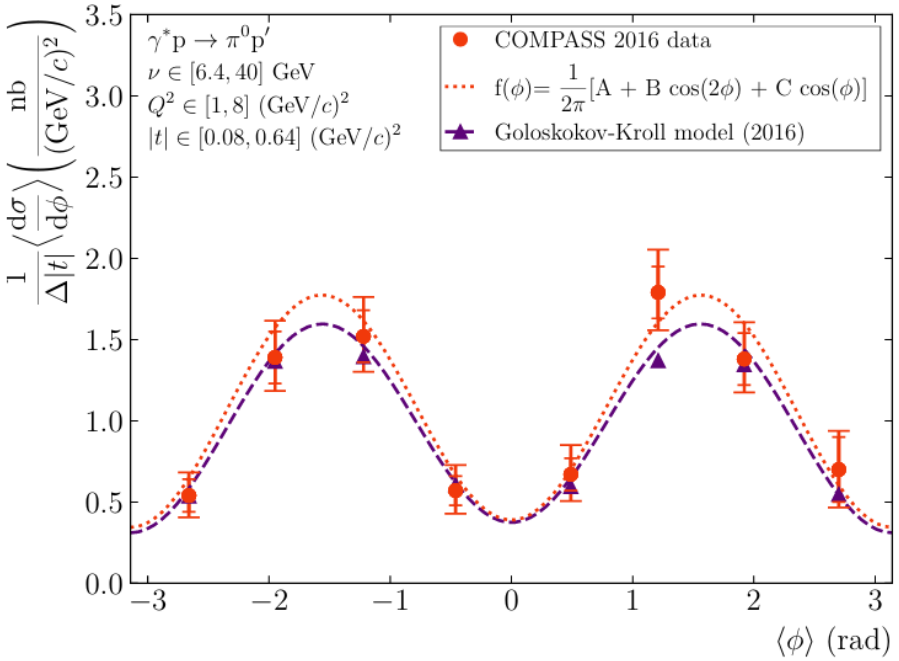




Exclusive π^0 from COMPASS

In progress

- Reproduce the previous study



Outlook

- Include 2017 data
- Extraction of cross sections

