

## Collins Analyzing Power and Azimuthal Asymmetries

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Spin azimuthal asymmetries in pion electro-production in deep inelastic scattering off longitudinally polarized protons, measured by HERMES, are well reproduced theoretically with no adjustable parameters using the chiral quark solution model for transversity distribution and DELPHI result for averaged over z Collins analyzing power ( $H_1^\perp D_1$ ). Predictions for azimuthal asymmetries for a longitudinal polarized deuteron target are given. From z-dependence of the asymmetry the z-dependence of the Collins fragmentation function is extracted (see Fig. 1). Using Collins analyzing power the first information on  $e(x)$  is extracted (see Fig. 2) from  $A''^0$  asymmetry of CLAS collaboration. For more details and references see hep-ph/0206267.

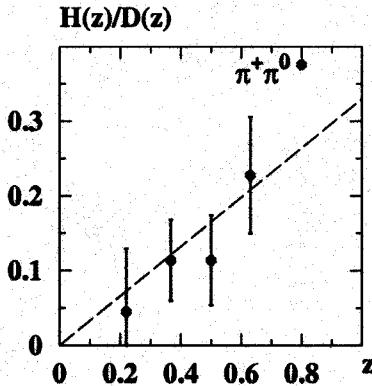


Fig.1. The Collins analyzing power  $H_1^\perp/D_1$  vs.  $z$ , as extracted from HERMES data for  $\pi^+$  and  $\pi^0$  production.

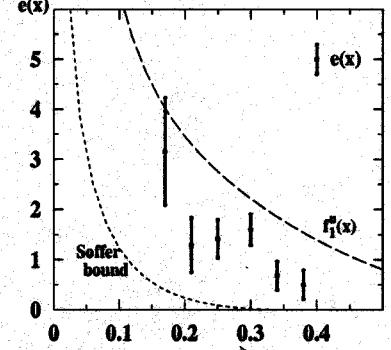


Fig.2. The flavour combination  $e(x) = (e^u + \frac{1}{4}e^d)(x)$ , with error bars due to statistical error of CLAS data, vs.  $x$  at  $\langle Q^2 \rangle = 1.5 \text{ GeV}^2$ . For comparison  $f_1^u(x)$  and the twist-3 Soffer bound are shown.