



Update of predictions for errors of flavor polarization

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- Changes w.r.t. SPS memo
- Short review of the method
- Predictions incl. 2007

Changes since January 2007

- Reproduction of all 2003 and 4/13 of 2004
 - new values of asymmetries
 - gain ~30% in 2003 and ~10% in 2004
 - new RICH code used
- Calculated asymmetries for year 2006
- Lower flux for 2006 in real data than in MEMO (~20%)
- Estimated flux for 2007 (thanks Alain)
- Changes at the analysis level:
 - included μ' -h misidentification
 - tuned RICH cuts
 - purity of K^+/K^- calculated and used

The Method

- Errors on proton asymmetry obtained from asymmetry on deuteron with scaling factors for dilution factor, Pt.

- Statistics scaled with fluxes

$$2007 \text{ flux} = 4.5 * 10^{13}$$

$$2002-2006 = 16.05 * 10^{13}$$

BTW in mDST smaller fluxes are seen:

- e.g. in 2006 $3.7 * 10^{13}$ instead of $4.7 * 10^{13}$

- Proton asymmetry taken from SMC (values were fitted and fluctuations reduced w.r.t. new errors)

First moments

2002-2006 data on deuteron +
prediction of 2007 on proton

Integrals over measured range $0.004 < x < 0.7$ with
different fragmentation functions:

	memo (EMC ^{***})	EMC	Kretzer	DSS
$\Delta(\Delta_{uv})$	0.07	0.06	0.08	0.06
$\Delta(\Delta_{dv})$	0.11	0.08	0.11	0.07
$\Delta(\Delta_u)$	0.04	0.03	0.05	0.03
$\Delta(\Delta_d)$	0.05	0.04	0.06	0.03
$\Delta(\Delta_s)$	0.09	0.04(0.05 ^{***})	0.07	0.014

*** weighted with purity

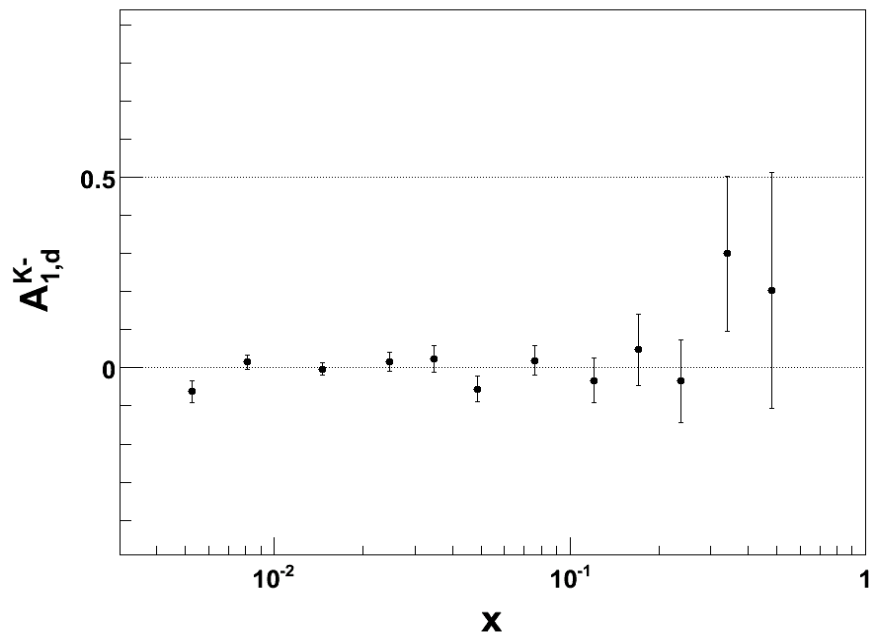
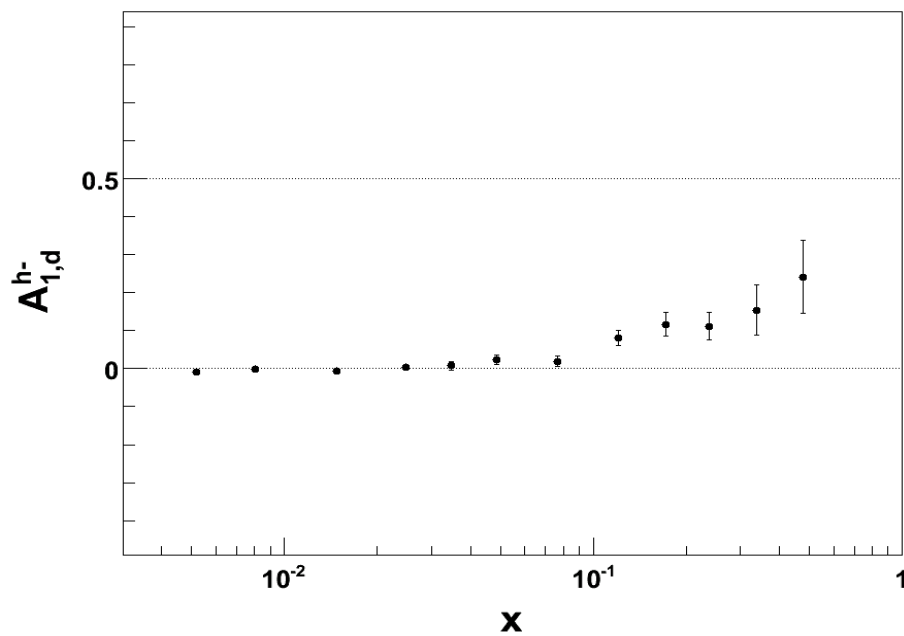
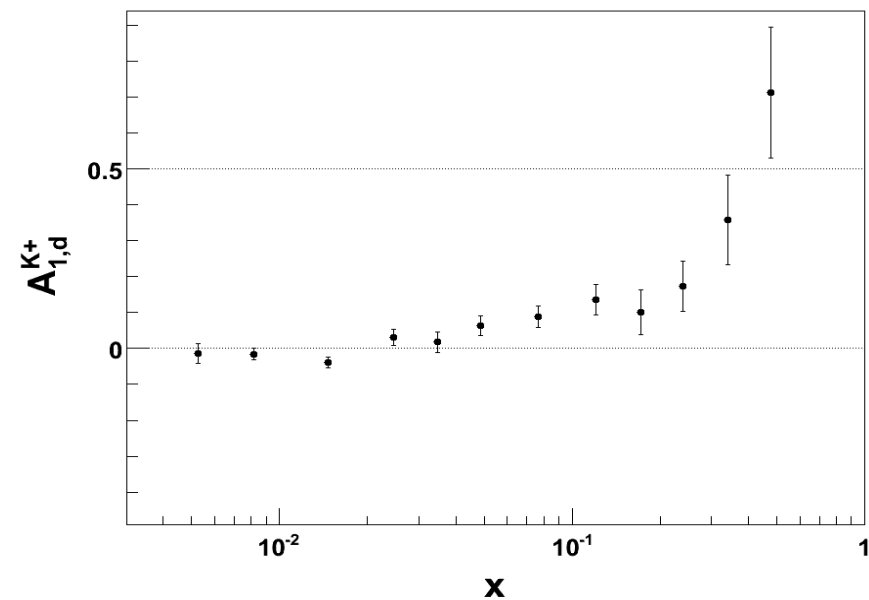
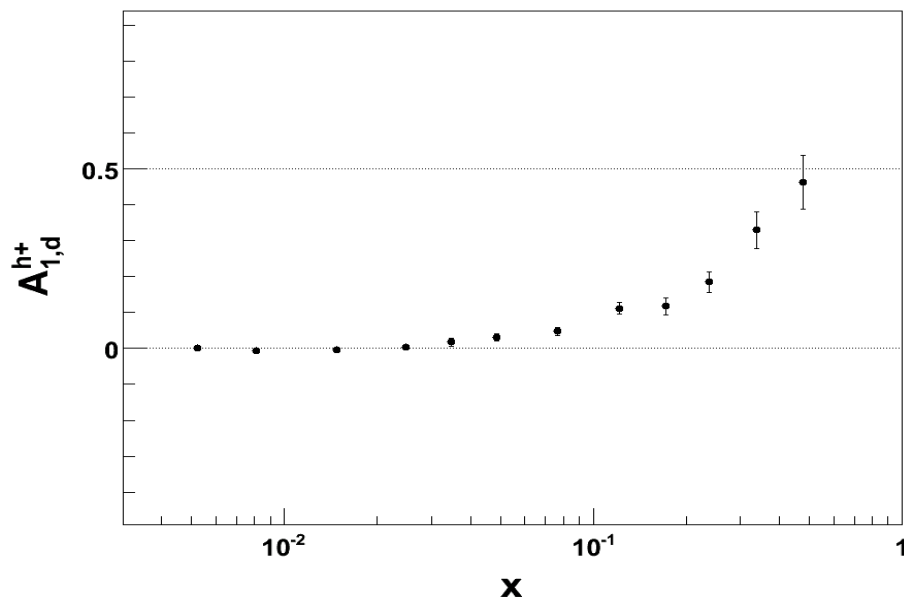
Conclusion

- Estimated errors strongly depend on fragmentation functions (known fact).

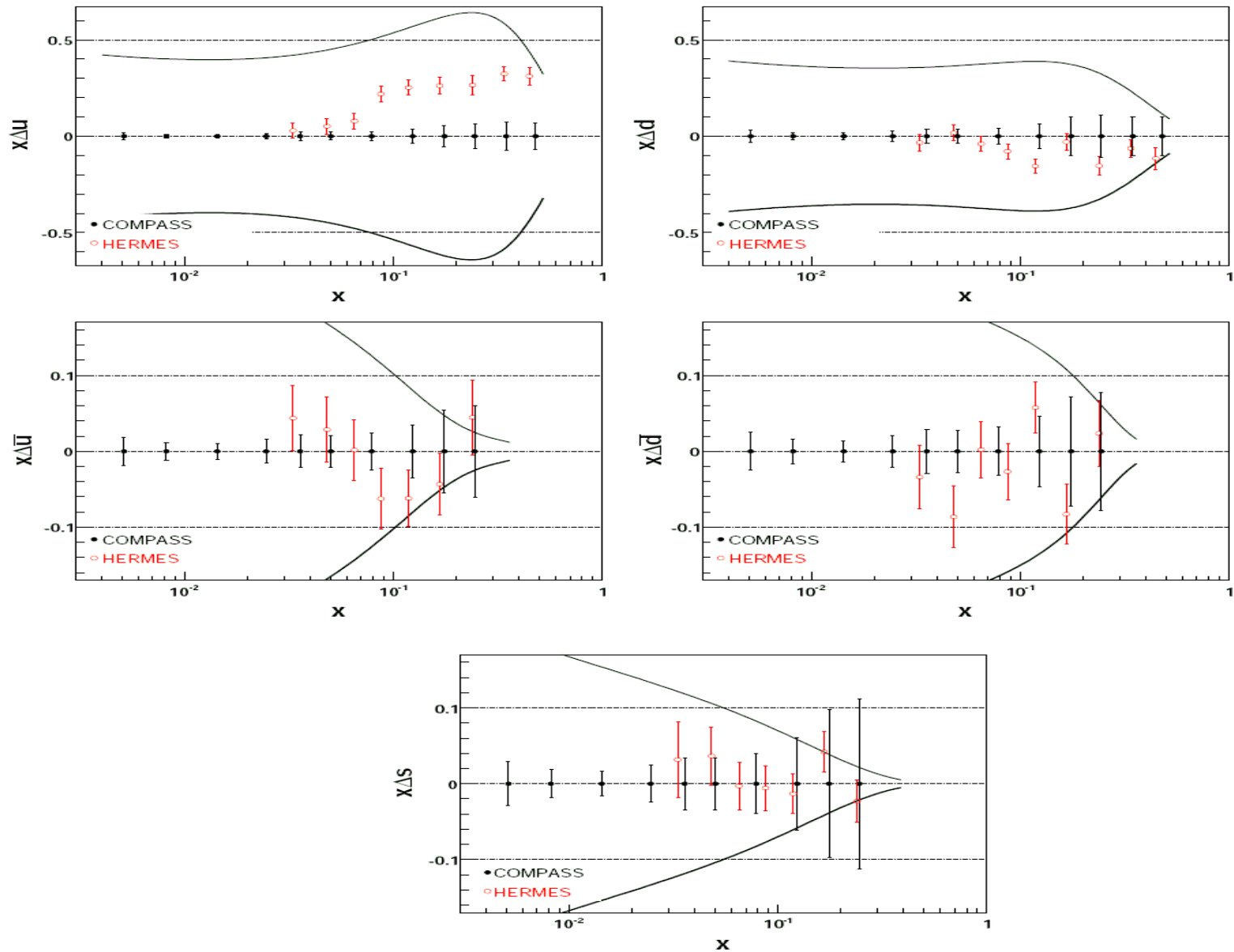
DSS was not used in SPS memo

- Our estimated fluxes disagree with measured fluxes; possible bias of estimated 2007 statistics

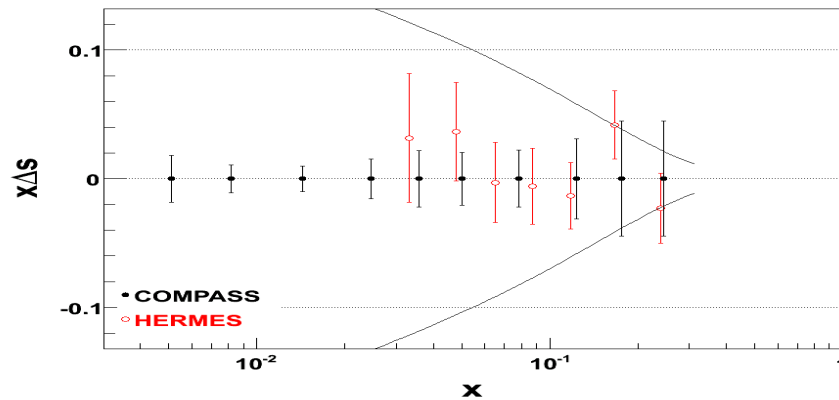
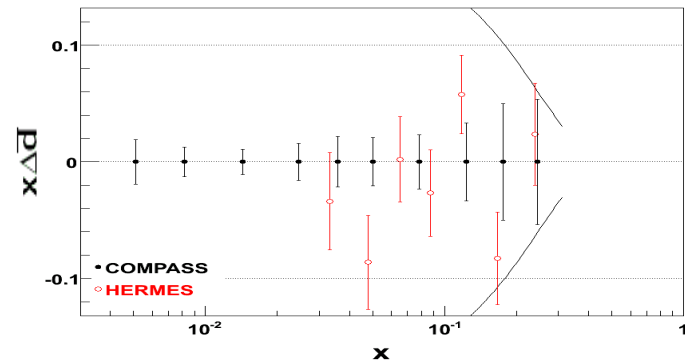
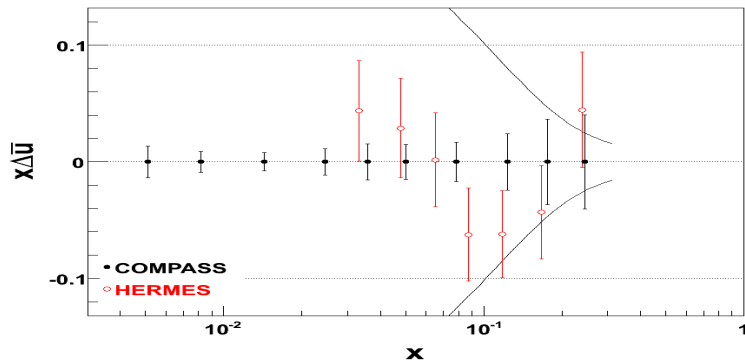
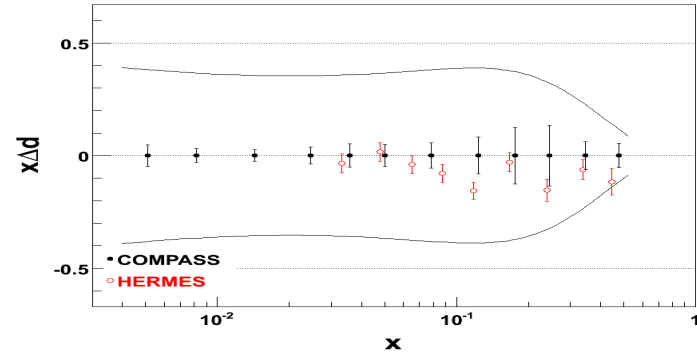
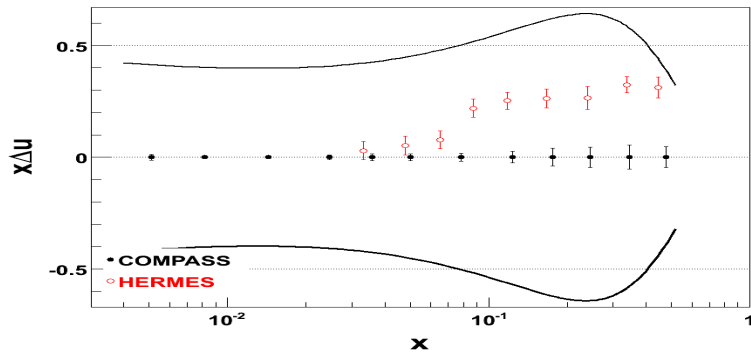
Asymmetries

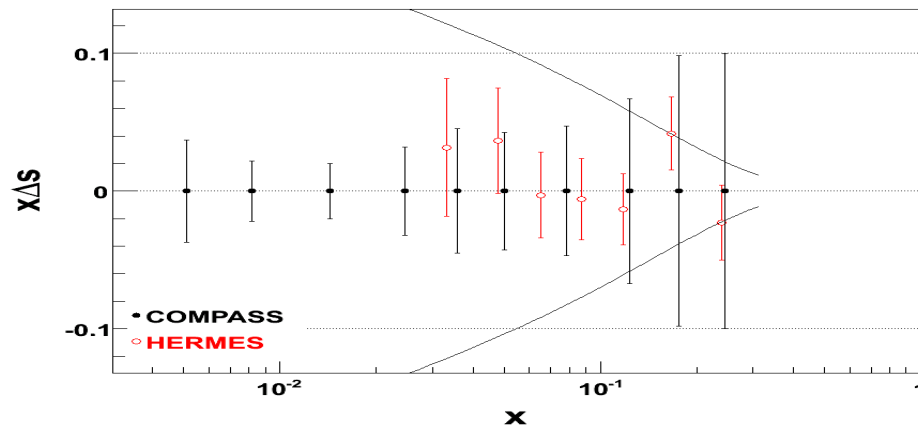
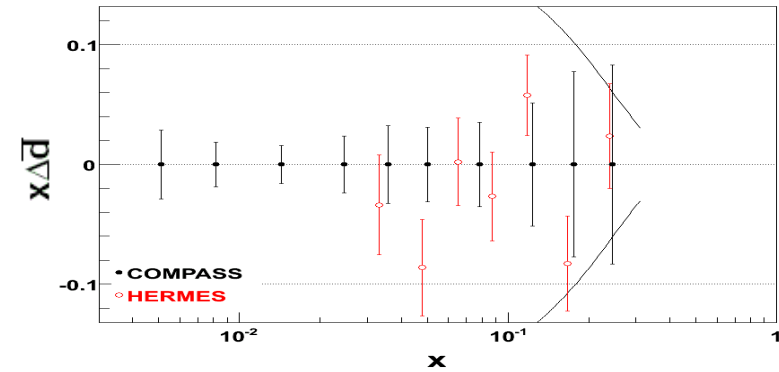
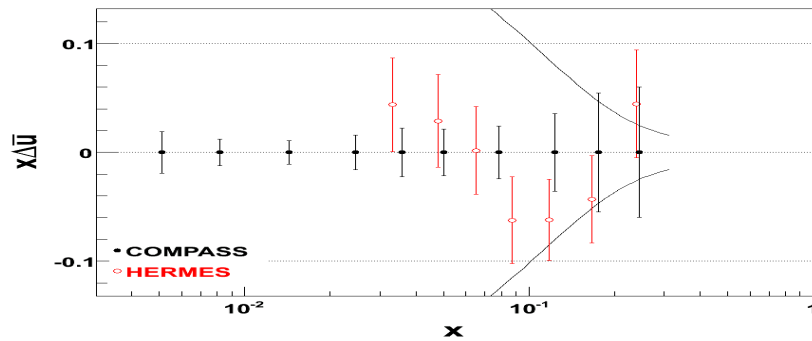
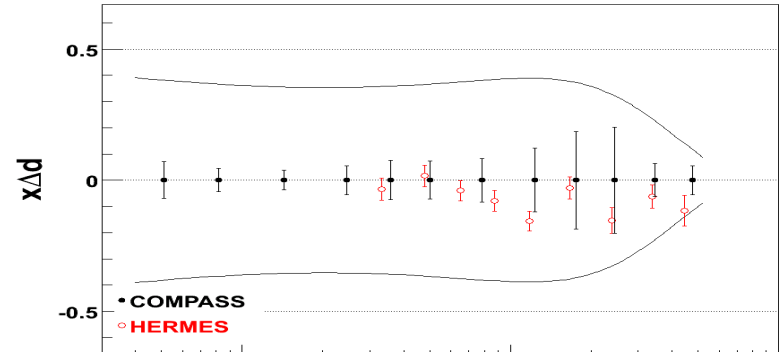
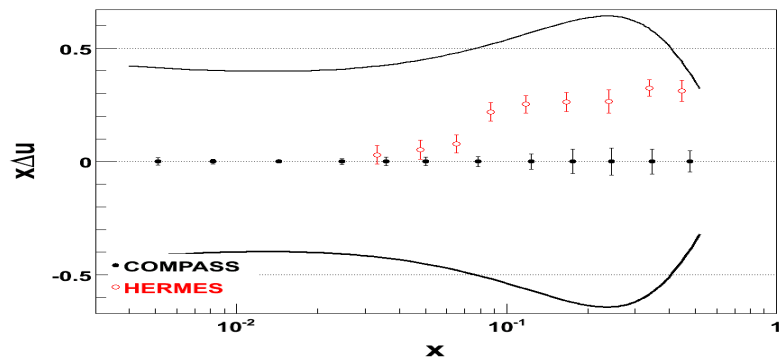


Plots from MEMO



EMC





DSS

