3rd Lund Small x workshop

7 - 8 May 2004, DESY, Hamburg

- Welcome in sunny Hamburg

- proceeedings of 2002 meeting

- Structure of the 2004 meeting and Goals
    - discussion
    - proceedings

- Collaboration Dinner tonight....

- visit to HERA detector on Saturday afternoon ????

Status of comparison with theory

status of comparsion in 2001

	collinear-fact.	k_t-fact.
HERA observables		
high Q^2 D* production	OK	OK
direct photoproduction of D*	1/2	OK
resolved photoproduction of D*	NO	1/2
high Q^2 B production	NO,	
direct photoproduction of B	OK?, NO	OK
resolved photoproduction of B	OK?	OK
TEVATRON observables		
high-$p_\perp$ D* production	?	
high-$p_\perp$ B production	OK?,	OK
low-$p_\perp$ B production	OK?,	OK
J/Ψ production	NO	?
LEP observables		
B production (σ_{tot})	NO	?

Status of comparison with theory

status of comparsion in 2001 2004

	collinear-fact.	k_t-fact.
HERA observables		
high Q^2 D* production	OK	OK
direct photoproduction of D*	1/2	OK
resolved photoproduction of D*	NO	1/2
high Q^2 B production	NO, OK	OK
direct photoproduction of B	OK?, NO OK	OK
resolved photoproduction of B	OK? OK	OK
TEVATRON observables		
high-$p_\perp$ D* production	? NO?	OK
high-$p_\perp$ B production	OK?, OK	OK
low-$p_\perp$ B production	OK?, OK	OK
J/Ψ production	NO	? OK ?
LEP observables		
B production (σ_{tot})	NO	? NO ?

Topics to be discussed

- k_t factorization formalism
  - definitions of unintegrated parton density functions (uPDF)
  - uPDFs and NLO calculations in the collinear approach
  - skewed PDFs
  - ☞ uPDFs in LO and NLO, what is needed for that ?

- Saturation, multiple scattering and diffraction
  - saturation from evolution at small k_t
  - application of the saturation model in $p\bar{p}$ collisions
  - saturation scale
  - ☞ uPDFs and saturation, what is needed for that ?

- Applications and experimental comparisons
  - extraction of uPDFs from precision fits to F_2 data from HERA
  - extraction of uPDFs from global fits (F_2, heavy quarks, jets etc.)
  - uPDF application to $p\bar{p}$ data
  - Higgs
  - ☞ obtain common agreed sets of uPDFs, what is needed for that ?

Goals

- k_t factorization formalism
  - ☞ in $b\bar{b}$ NLO collinear catching up with k_t factorisation
  - off-shell matrix elements in LO and NLO
  - ☞ obtain common strategy... scales in ME's etc
  - uPDF in LO and NLO
  - even within 1-loop (DGLAP) approach
  - check evolution codes in 1-loop and all-loops
  - ☞ must agree...
  - MC simulation

- Saturation, multiple scattering and diffraction
  - MC simulation according to AGK rules

- Applications and experimental comparisons
  - uPDF library: which format, howto ?
  - uPDF: errors, scales etc ?

Collaboration Dinner

- at 19:00 *Blaue Blume*, Gerichtstr., HH-Altona
  - choose until 15:00
  - register in list

Welcome to sunny Hamburg

Welcome all

to

3rd Lund small x meeting

Welcome to sunny Hamburg

Welcome to fruitful and interesting discussions

Thanks to DESY for financial support ...