

# FYSH560, spring 2011

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kl 2011

ALICE Collaboration: Charged-particle multiplicity measurement in proton-proton collisions at ...  
arXiv:1004.3034[hep-ex]

## Charged-particle multiplicity measurement in proton-proton collisions at $\sqrt{s} = 0.9$ and 2.36 TeV with ALICE at LHC

ALICE collaboration

**Table 1.** (a) Relative fractions of SD and DD events, as obtained from previous measurements at 0.9 TeV [27] and 1.8 TeV [30,33]. The measured DD fractions are scaled according to the prescription in [33]. Corresponding fractions calculated using PYTHIA and PHOJET are given for events within the diffractive-mass range covered experimentally (see text), and also without the restriction on diffractive-mass (parentheses). (b) Selection efficiencies for different classes of events: at 0.9 TeV, where the MB<sub>OR</sub> selection was used for INEL sample and MB<sub>AND</sub> for NSD sample; at 2.36 TeV, where the selection using the SPD only was used for both INEL and NSD samples.

(a) Relative process fractions						
	0.9 TeV		1.8 TeV		2.36 TeV	
	Data [27]	PYTHIA	PHOJET	Data [30,33]	PYTHIA	PHOJET
SD	0.153 ± 0.023	0.189 (0.223)	0.152 (0.191)	0.159 ± 0.024	0.167 (0.209)	0.126 (0.161)
DD	0.095 ± 0.060	0.123	0.066	0.107 ± 0.031	0.127	0.057

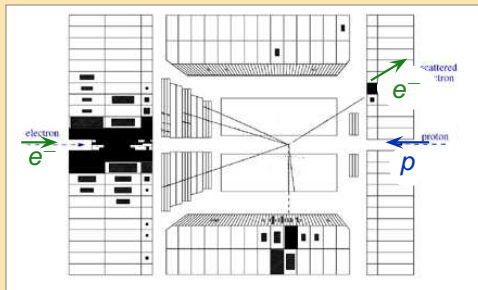
  

(b) Selection efficiencies						
	0.9 TeV				2.36 TeV	
	PYTHIA		PHOJET		PYTHIA	PHOJET
	MB <sub>OR</sub>	MB <sub>AND</sub>	MB <sub>OR</sub>	MB <sub>AND</sub>	MB <sub>SPD</sub>	MB <sub>SPD</sub>
SD	0.77	0.29	0.86	0.34	0.55	0.62
DD	0.92	0.49	0.98	0.77	0.63	0.79
ND	1.00	0.98	1.00	0.96	0.99	0.99
INEL	0.95		0.97		0.86	0.90
NSD		0.92		0.94	0.94	0.97

# Diffractive event at HERA

Around 15% of HERA events **diffractive**.

Experimental signal:  
rapidity gap.

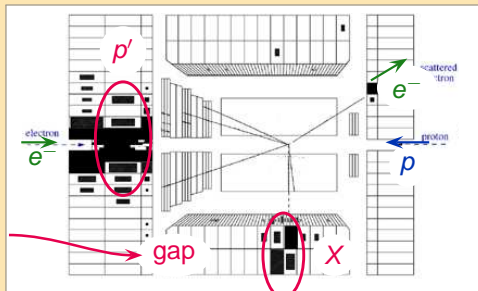


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# Diffractive event at HERA

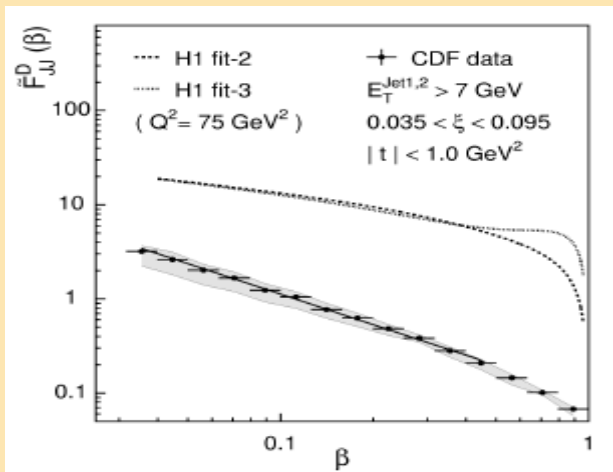
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# Diffractive structure functions not universal



Assumption (Ingelman-Schlein) was:

$$xg_D(x = \beta x_P) = f_P(x_P) \times xg_P(\beta)$$

► Does not work.

title