Discussion Session

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The applicability and limitations of collinear factorization, and of linear parton evolution

The program included a discussion session about the applicability and limitations of collinear factorization, and of linear parton evolution. Moderator was *J. Bartels*, and four speakers, *M. Diehl, K. Golec-Biernat, A. Cooper-Sarkar,* and *A. de Roeck*, were asked to act as "provocateurs", giving short introductory presentations of some essensial open problems. In this short write-up we only present the most important points. The full discussion is video-recorded, and can be seen on the web page `http://ismd08.desy.de`. together with the slides from the provocateurs.

On the theory side strong emphasis was given to the problem to *cast NLO BFKL into dipole form*, and to study saturation and the *dipole model beyond leading* $\log(1/x)$. The dipole model has been successful in describing inclusive total cross sections and diffraction in DIS, and also quasi-elastic reactions like DVCS and $\gamma p \to Vp$. In exclusive vector meson production the NLO corrections are very large, which emphasizes the need for NLO corrections to the dipole evolution. The dipole model and the impact parameter formalism is also the main tool for studies of saturation and multiple interactions. Thus studies of saturation also calls for dipole models beyond leading $\log(1/x)$, which includes *NLL BK equation phenomenology*.

The phenomenologically successful *Geometric Scaling* ougt to be better understood. It has been expected in the deeply saturated region, but is observed also outside this regime. This problem is related to the question to what extent saturation is at work at HERA.

For *LHC physics* an understanding of nonlinear effects from saturation, pomeron loops, and multiple interactions will be very important. Besides including NLL effects in the dipole evolution, this also emphasizes the need for further studies of *pomeron interactions* and also *a dipole model for exclusive final states*. Saturation effects and the formation of pomeron loops are color suppressed compared to the splitting process in the dipole cascade. Therefore *effects beyond the large* N_c *approximation* and color reconnection are also very important subjects for further studies.