Paul Hoyer: Contributions

1972

My first proceedings paper:

Articles in conference proceedings

1. P. Hoyer, The generalized optical theorem, (Rapporteur's talk), Proceedings of the IIIrd International Colloquium on Many-Body Reactions, Zakopane (1972), p. 182-211.

Paul Hoyer: Contributions

1979

JET ANALYSIS*

By P. Hoyer

Nordita, Copenhagen**

(Received September 25, 1979)

The various theoretical descriptions of jets are discussed, including lowest order and leading logarithm calculations in QCD, as well as phenomenological models for non-perturbative fragmentation. Recent results concerning jet broadening, general branching equations and alternatives to the quark cascade model are emphasized.

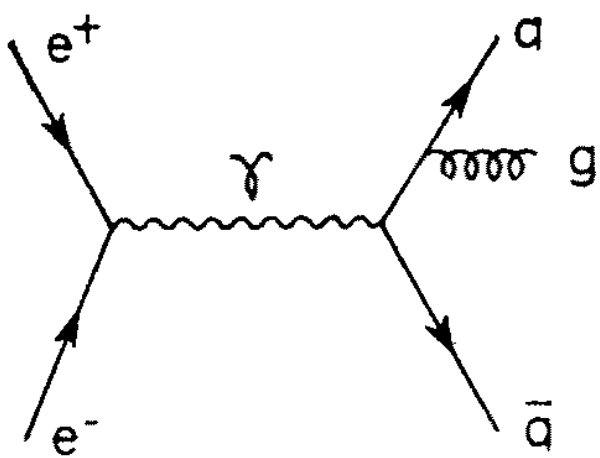
* Presented at the XIX Cracow School of Theoretical Physics, Zakopane, June 3–17, 1979.

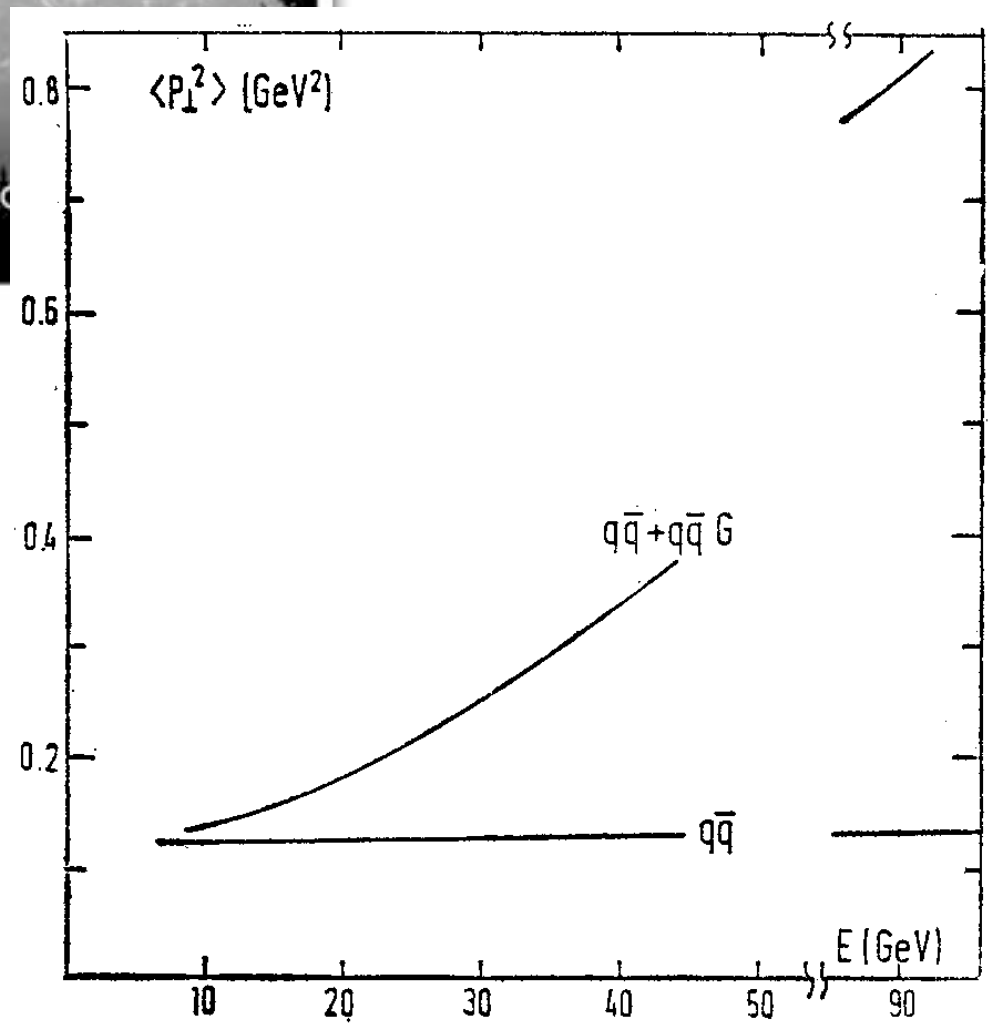
** Address: Nordita, Blegdamsvej 17, DK-2100 Copenhagen Ø, Denmark.

Paul Hoyer: Contributions

1979

$$\langle p_T \rangle \sim Q/\log Q,$$





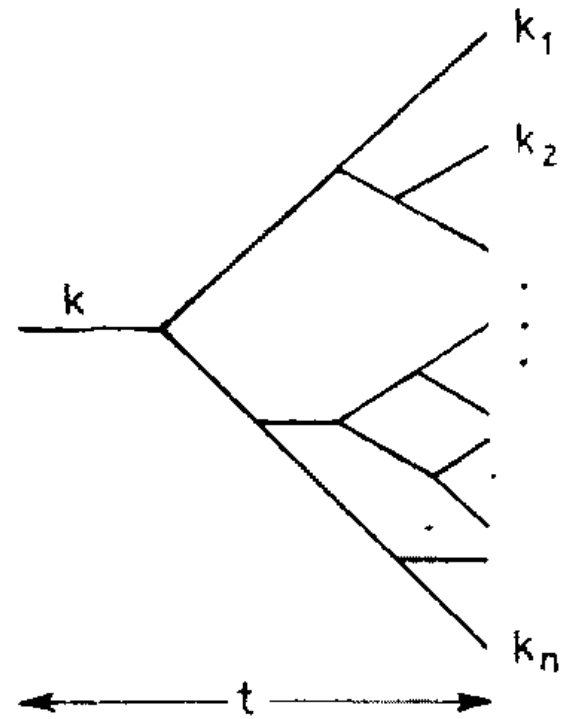
where $Q \equiv E_{CM}$. This is a dramatic (power-law!) violation of the parton model assumption $\langle p_T \rangle \sim$ const., and should be observable even with moderate statistics. In Section 4 we discuss this and other $O(\alpha_s)$ effects in more detail, and try in particular to estimate the energy range at which (3.1) should start to apply.

Paul Hoyer: Contributions

1979

Partons And Branching.
P. Cvitanovic, P. Hoyer, (Nordita) , K. Konishi, (Rutherford) .
Published in **Phys.Lett.B85:413,1979**.

Parton Evolution As A Branching Process.
P. Cvitanovic, P. Hoyer, (Nordita) , K. Zalewski, (Cracow, INP) .
Published in **Nucl.Phys.B176:429,1980**.



$$F(k, \phi, t) = \sum_{n=1}^{\infty} \int dk_1 \ldots dk_n P(k \to k_1, \ldots, k_n; t)\delta\left(\sum_1 k_i - k\right)\phi(k_1) \ldots \phi(k_n)/n!. \quad (5.1)$$

Here $\phi(k)$ is a function that can be varied arbitrarily. It is clear that the fragmentation probabilities can be deduced once $F(k, \phi, t)$ is known for all ϕ.

1979

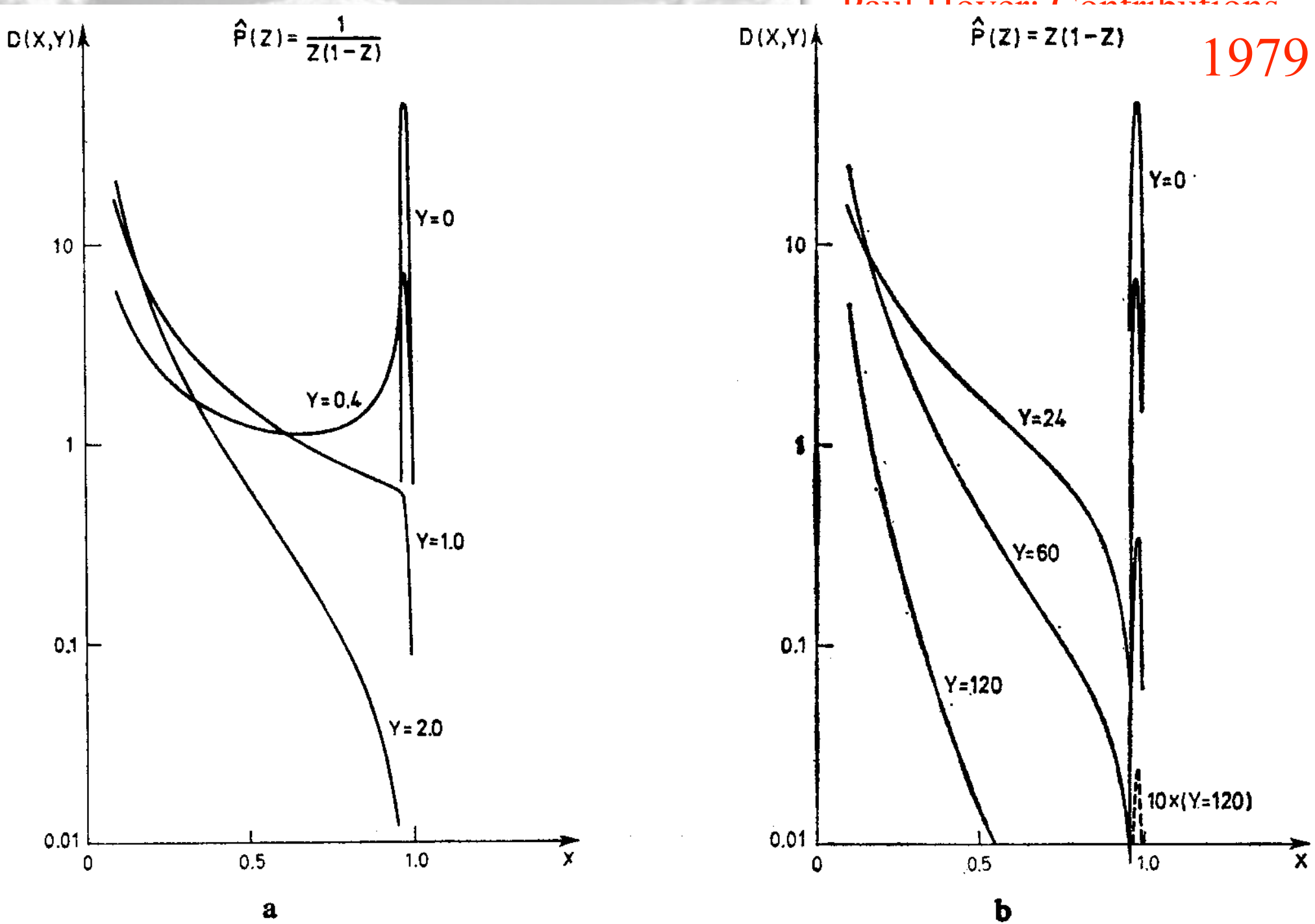


Fig. 16. Single parton inclusive distributions at various times for (a) $P(x) = 1/x(1-x)$. (b) $P(x) = x(1-x)$

Paul Hoyer: Contributions

1982

TIME EVOLUTION IN FERMION PATH INTEGRALS*

By P. Hoyer

Department of High Energy Physics, University of Helsinki**

(Received September 15, 1982)

The formulation of fermion path integrals as transition amplitudes is discussed for gauge theories. Fermion states are specified by products of Grassmann variables, which form an orthogonal and complete basis. The expression for the Hamiltonian operating on the products is derived. In an application to Green functions, the fermion propagator is derived for a variety of boundary conditions at $t = \pm \infty$.

* Presented at the XXII Cracow School of Theoretical Physics, Zakopane, May 30 — June 9, 1982.

** Address: Department of High Energy Physics, Helsinki University, Siltavuorenpenger 20C, SF-00170 Helsinki 17, Finland.

Paul Hoyer: Contributions

1992

NEW QCD EFFECTS AT LARGE x*

P. HOYER

Department of Physics
University of Helsinki, Helsinki, Finland

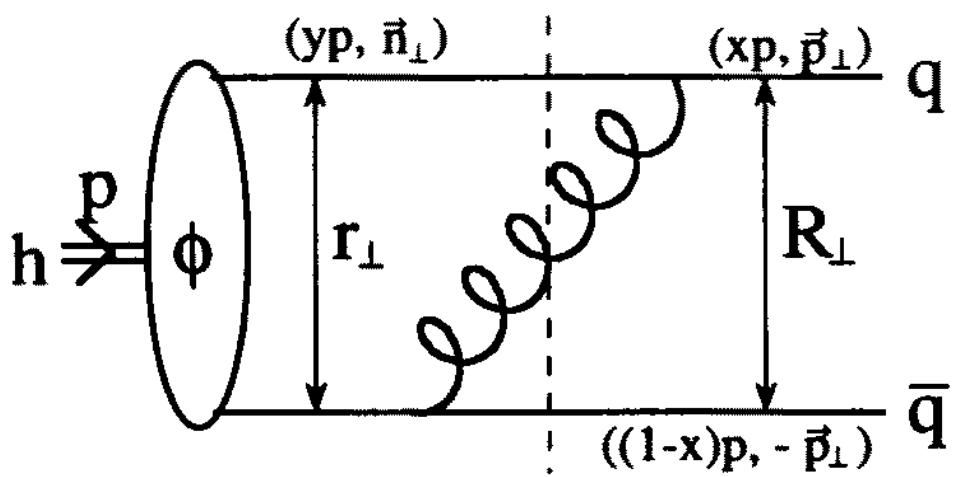
* Presented at the XXXII Cracow School of Theoretical Physics, Zakopane, Poland, June 2–12, 1992.

The material presented here is the result of collaborations and discussions with, in particular, Stan Brodsky, Vittorio Del Duca, Al Mueller, Wai-Keung Tang and Ramona Vogt. I am also grateful to the organizers of the Zakopane School for their invitation and warm hospitality.

Paul Hoyer: Contributions

1992

$$\left.\begin{array}{r} Q^2 \to \infty \\ x \to 1 \end{array}\right\} \quad \text{with } \mu^2 = Q^2(1-x) \text{ fixed}$$



Paul Hoyer: Contributions

1992

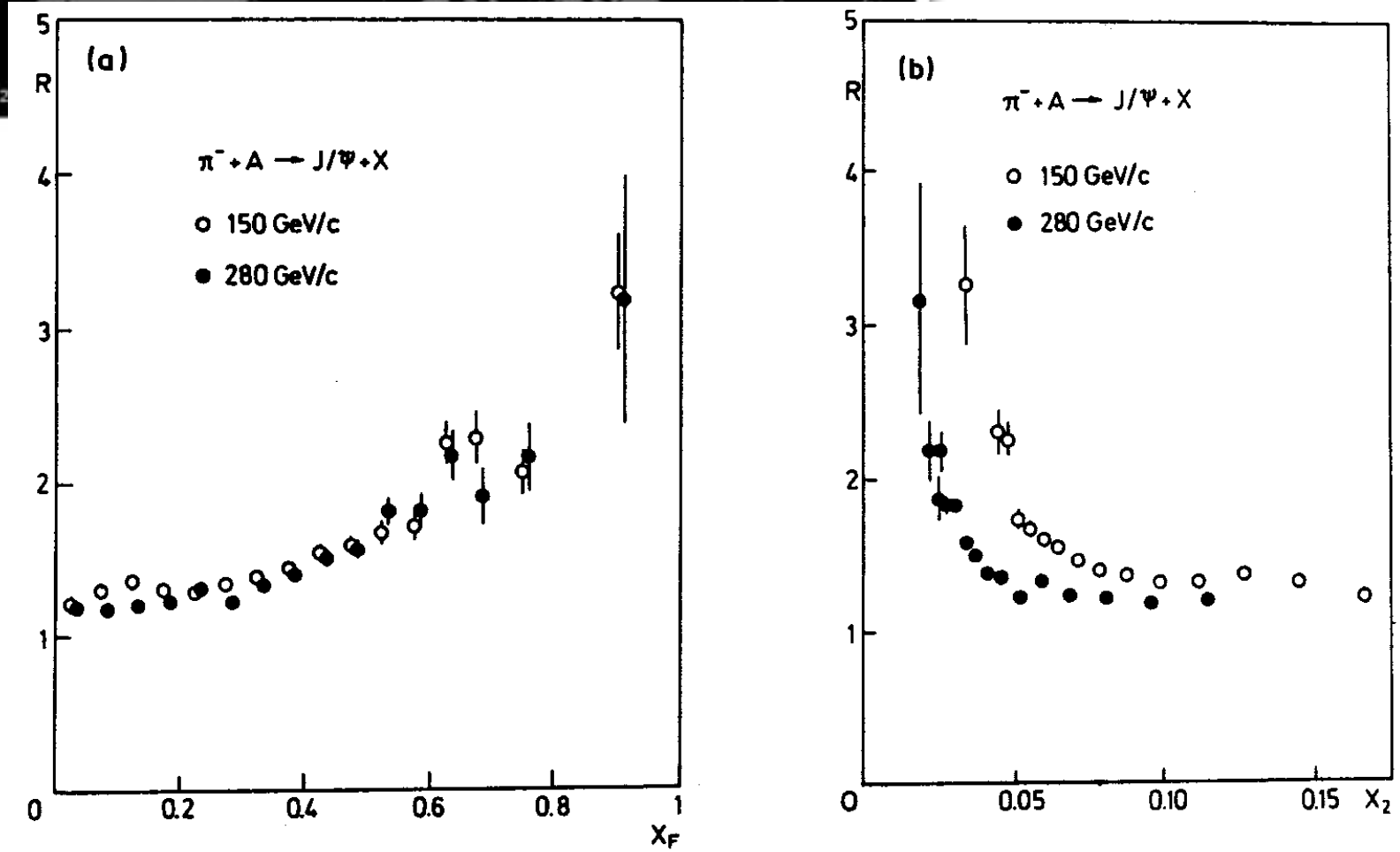


Fig. 7. The ratio $R = A\sigma(pp \rightarrow J/\psi + X)/\sigma(pA \rightarrow J/\psi + X)$ of inclusive J/ψ production cross sections on Hydrogen and Platinum [31]. In (a) the ratio is plotted as a function of the Feynman x_F of the J/ψ, and in (b) as a function of the momentum fraction x_2 of the target parton [34].