Some questions for discussion related to dissociation

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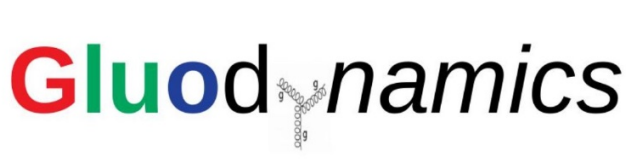
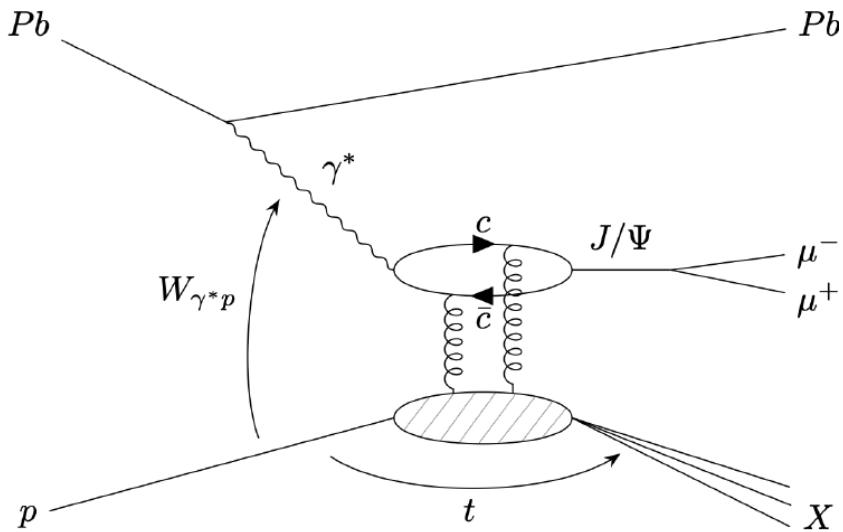
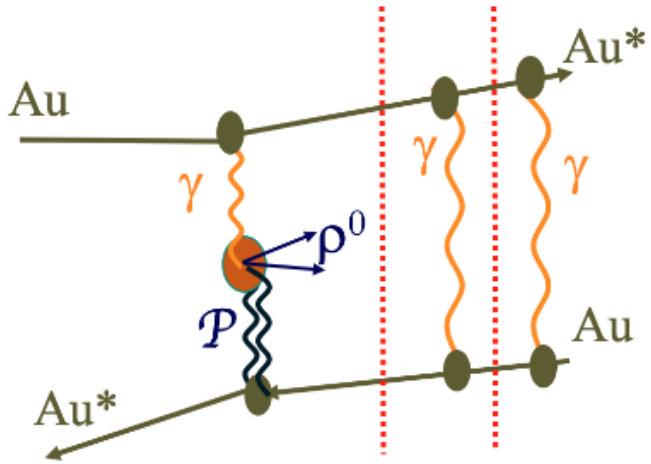


Definition of dissociative production



- What is the size of the rapidity gap between fragments and quarkonium required to separate it from inclusive production?
- Is this cross section ratio $\sigma_{diss}/\sigma_{inc}$ independent for a wide range of gap values?
- Do we need to know more about the dissociative system (feasible at EIC?)?

Incoherent production in nuclear collisions



- In principle, concepts carry over to nuclear collisions, very interesting for QGP physics & saturation
- $\rightarrow$ however: how do we treat nuclear excitation & coherence in inelastic collisions?
- target to be still considered ´frozen´: time-scale separation?
- How to be defined to make definitions to allow for ´factorisation´?
- Spencer Klein brought this up in arXiv:2301.01408
  $\rightarrow$ proposes semiclassical approach

Influence of quarkonium wave function

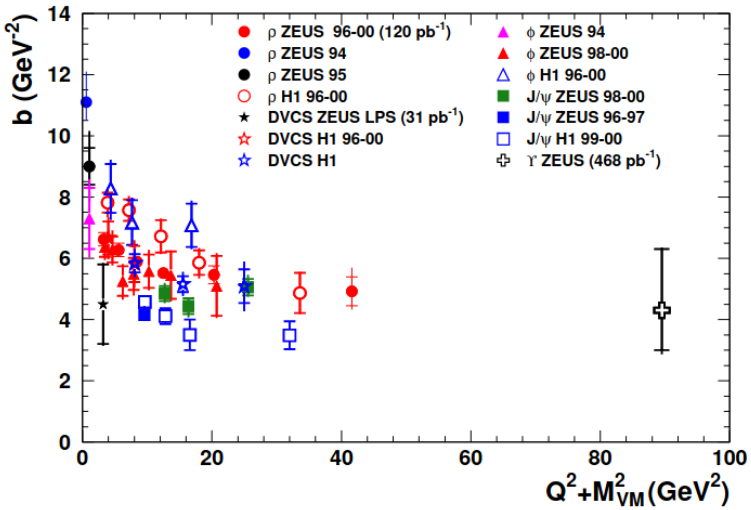


Figure 4: *Comparison of the HERA measurements of the slope parameter b as a function of the scale $Q^2 + M^2_{VM}$ for exclusive $\Upsilon(1S)$ production (the rightmost data point), for other exclusive vector-meson production [5,32–39] and for deeply virtual Compton scattering (DVCS) [40–42].*

From Zeus collaboration publication: Phys.Lett.B 708 (2012) 14

- Is the impact of the quarkonium wave function negligeable in the b-slope?
- model sensitivity found to $q\bar{q}$ size, i.e. $q\bar{q}$ not small enough, see in Demirci, Lappi, Schlichting PRD 106 (2022) 7
- HERA data of different mesons $\approx$ compatible within sizeable uncertainties