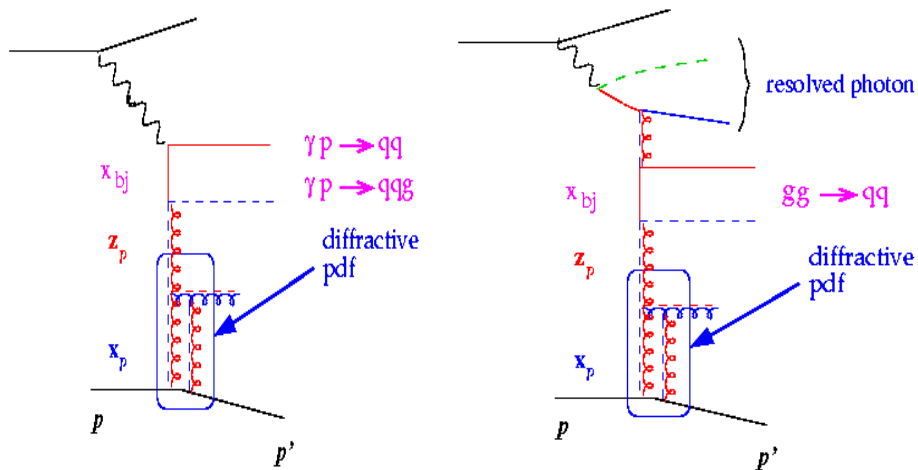


Diffraction jets and factorization breaking

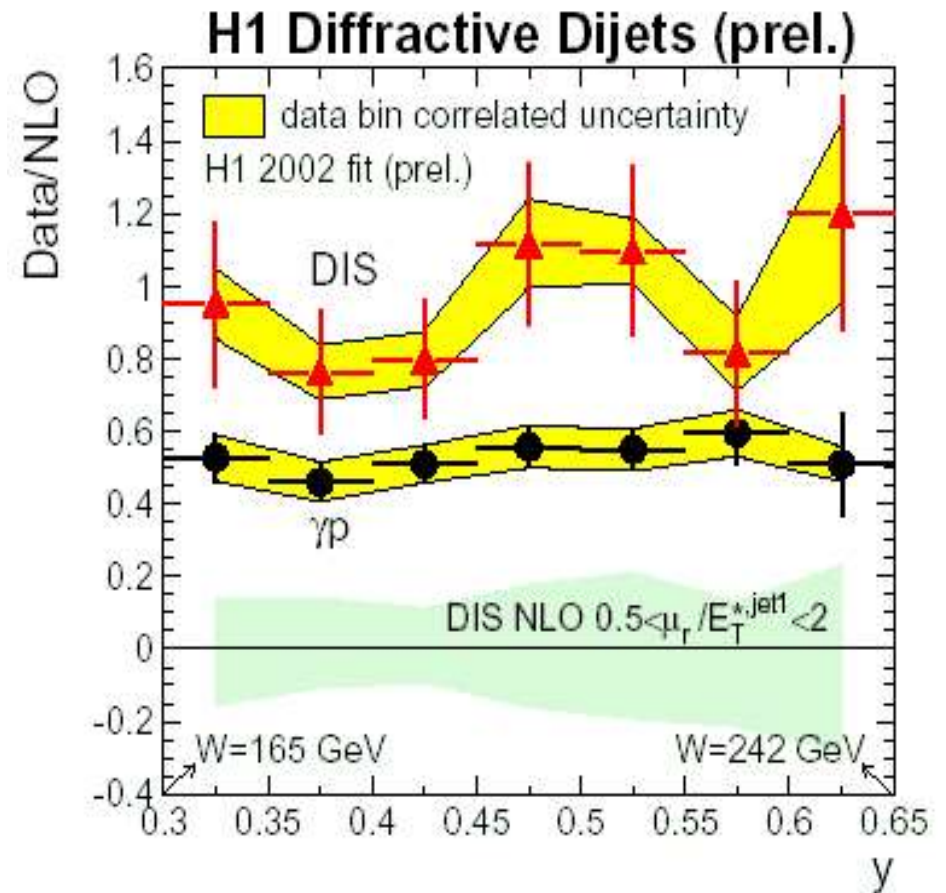
H. Jung
DESY

- Try to identify open problems
- start discussion
 - address/solve theoretical problems
 - address/solve experimental problems

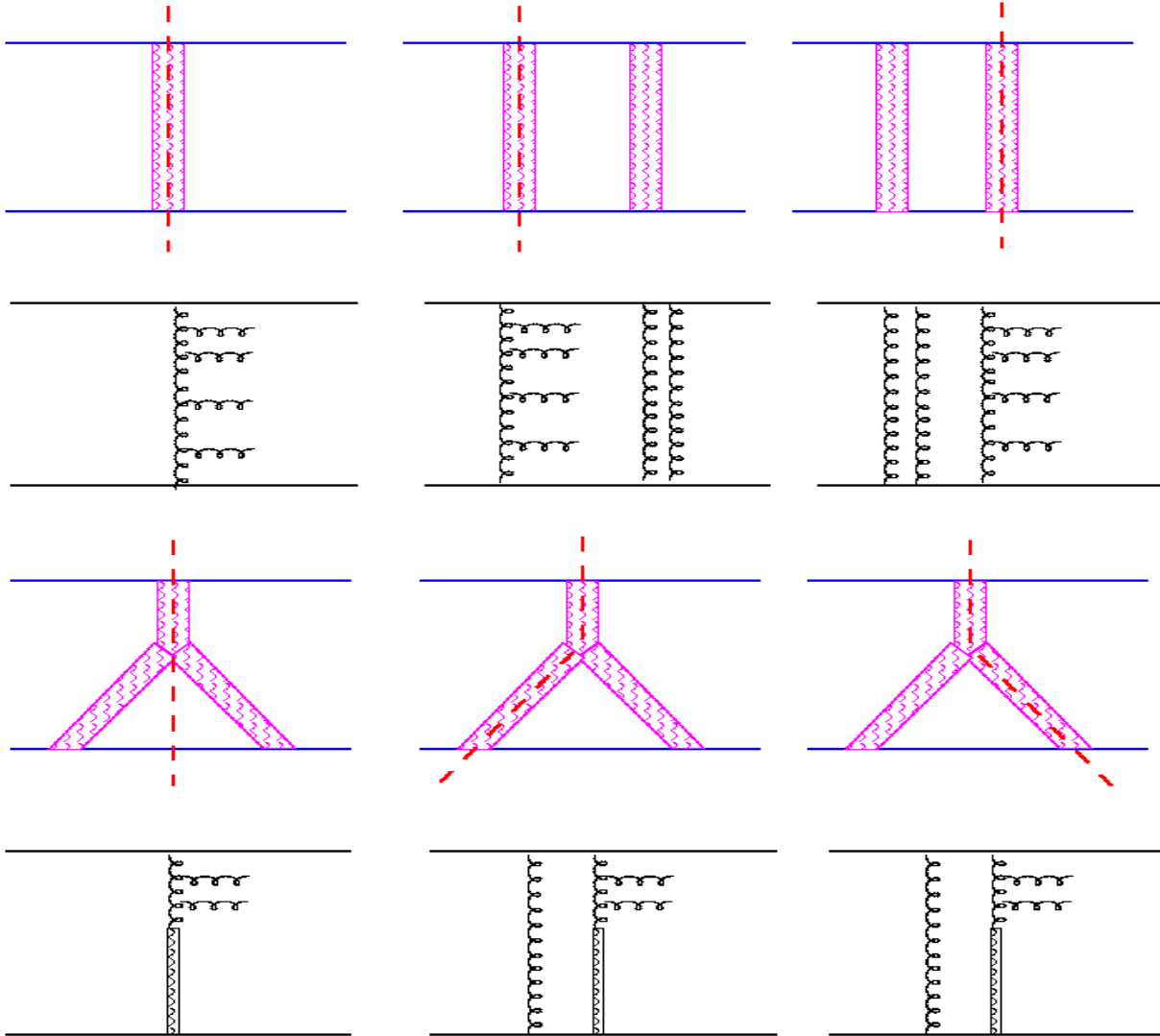
The problem



- Dijets in DIS agree with NLO calculation
- resolved photon \sim proton
- photo production dijets data larger than prediction from NLO



Suppression and AGK



How is suppression related to AGK cutting rules ?

Connect to:

- multiple scatterings
- saturation
- who can tell the weight factor
- what about double gaps

Where is suppression visible ?

- global suppression vrs suppression of resolved photon part only
- How to identify ?
 - what are the relevant distributions ? x_{gamma} ?
- suppression of resolved part in NLO – what should be suppressed ?
 - point-like also or only VDM part
 - what about possible neg x-section when suppressing resolved part ?
 - what about cancellations ?
 - is VDM part clearly defined ?

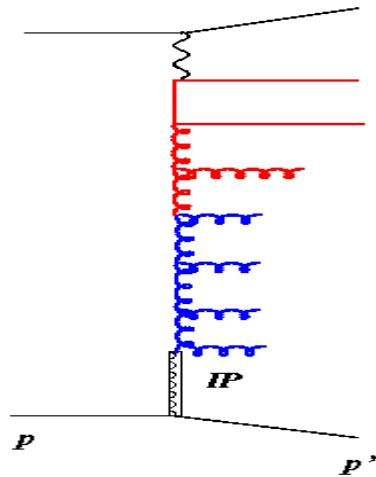
Diffractive dijets in DIS

- DIS dijets – contribution from resolved virtual photons ?
 - resolved virtual photon or only concept for calculation of higher orders ?
 - pointlike and/or VDM part ?
 - what should be suppressed ?
 - VDM part is negligible already at moderate Q^2 ...
- **identify region, where no suppression is expected:**
 - **experimentally & theoretically**
 - is it at large Q^2 (what is large ?)

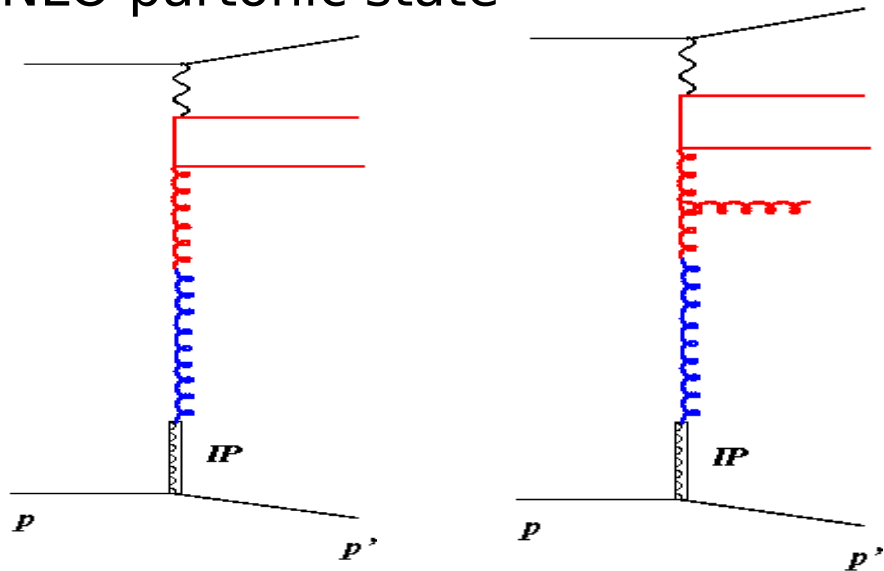
Hadronization Corrections for NLO

- how to go from observable hadronic state to partons in NLO ?
- how to relate parton state in NLO to partons in MC ?

MC Partonic state

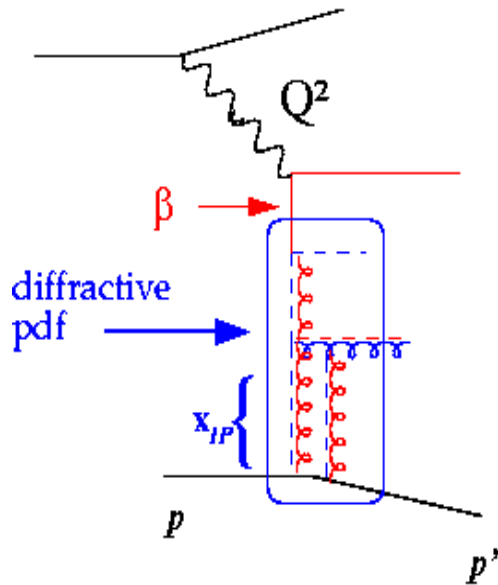


NLO partonic state

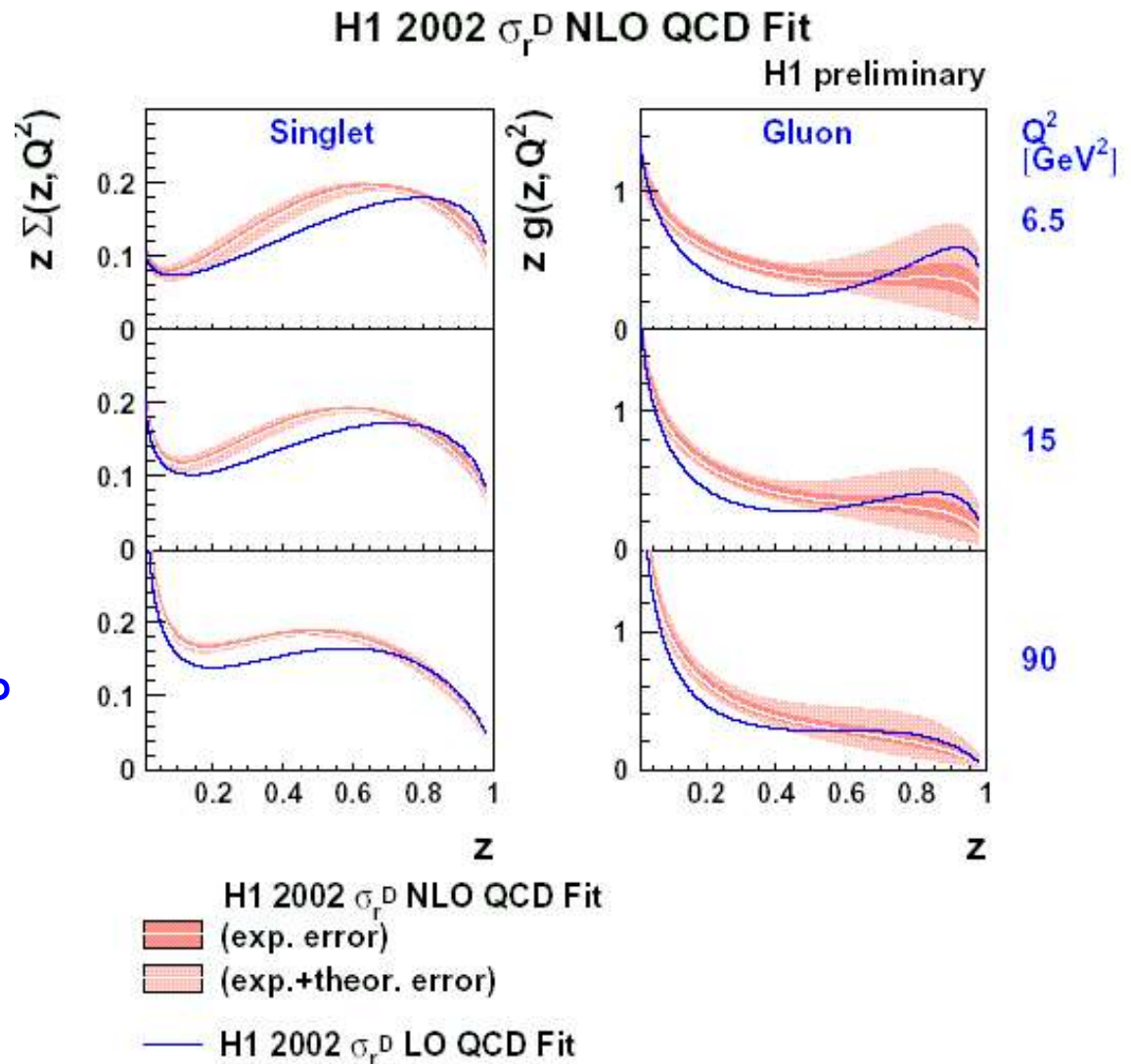


- which effect has multiparton emission in MC for 2 or 3 partons in NLO ?
effect of parton cascade on corrections ?
- howto estimate error/uncertainty of hadronization corrections ?
Lund string vrs Cluster
or CDM vrs MEPS
- howto get same partonic state in MC and NLO ?

Uncertainty of diffractive pdfs



- difference of LO/NLO pdfs:
- how certain are we on DGLAP evolution for gluon dominated object ?



Questions ...

- suppression of diff-dijets in photoprod: connection to AGK and saturation, multiple scatterings, etc
- where is suppression visible ?
 - x gamma distributions ?
 - suppression also in DIS or where to find a region of no suppression ?
- estimates of hadronisations corrections – howto ?
- problem of LO/NLO suppression ... pdfs ?