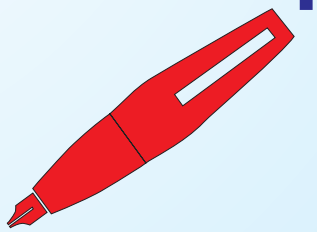
Outline for HERAPDF3.0 Paper

Extract possible messages which
can be understood by experts and non – experts..

HERAPDF2.0Jets was something to show the consistency of it all.

Now, we want to focus on jets, and especially on what difference treatment at NLO and NNLO makes.

Thus, I would suggest to go back one step and anchor on HERAPDF2.0.



Outline for HERAPDF3.0 Paper

Thus, I would suggest to go back one step and anchor on HERAPDF2.0.

- **keep ALL settings as for HERAPDF2.0**
  [including mass parameters for NLO and NNLO, respectively]
- **throw the heavy flavour data out of the fit**

► **HERAPDF2.5NLO-Jets-only**

Compare HERAPDF2.5NLO-Jets-only to HERAPDF2.0NLO-Jets

► **Message: it makes no difference [hopefully]**

[heavy flavour events were used three times]

Outline for HERAPDF3.0 Paper

Produce exactly the same for NNLO:

- keep ALL settings as for HERAPDF2.0
  [including mass parameters for NLO and NNLO, respectively]
- throw the heavy flavour data out of the fit

► **HERAPDF2.5NNLO-Jets-only**

Compare HERAPDF2.5NNLO-Jets-only to HERAPDF2.5NLO-Jets-only

► **Message: What does NNLO give us?**

– α_S? – scale uncertainty?

Outline for HERAPDF3.0 Paper

Add new jet data:

- keep ALL settings as for HERAPDF2.0
  [including mass parameters for NLO and NNLO, respectively]
- keep the heavy flavour data out of the fit

► **HERAPDF3.0 NLO and NNLO-Jets-only**

Compare HERAPDF3.0NLO and NNLO-Jets-only to HERAPDF2.5NLO and NNLO-Jets-only

► **Message: What do low Q^2 jets give us?**

Outline for HERAPDF3.0 Paper

Do new mass parameter scans with new HF data:

- keep all other settings as for HERAPDF2.0
- keep the heavy flavour data out of the fit

► **HERAPDF3.5 NLO and NNLO-Jets-only**

Compare HERAPDF3.5NLO and NNLO-Jets-only to HERAPDF3.0NLO and NNLO-Jets-only

► **Message: Do mass parameters matter? probably not at this level?**

Outline for HERAPDF3.0 Paper

Use new mass parameters and new HF data:

- keep all other settings as for HERAPDF2.0
- add the heavy flavour data to the fit

► **HERAPDF3.5 NLO and NNLO-Jets+HF**

Compare HERAPDF3.5NLO and NNLO-Jets+HF to HERAPDF3.5NLO and NNLO-Jets-only

► **Message: Do HF data influence things like – α_s? – scale uncertainty?**

Outline for HERAPDF3.0 Paper

Assume that everything is consistent:

- **HERAPDF3.0 NLO and NNLO-Jets-only would be main result!** Could be 3.5
- **Full error analysis !** if necessary.

All the other variants would only have exp/fit uncertainties and would be called consistent

- **HERAPDF3.0 NLO and NNLO-Jets-only would become public with its α_s as a main result and a discussion on scale uncertainties.**