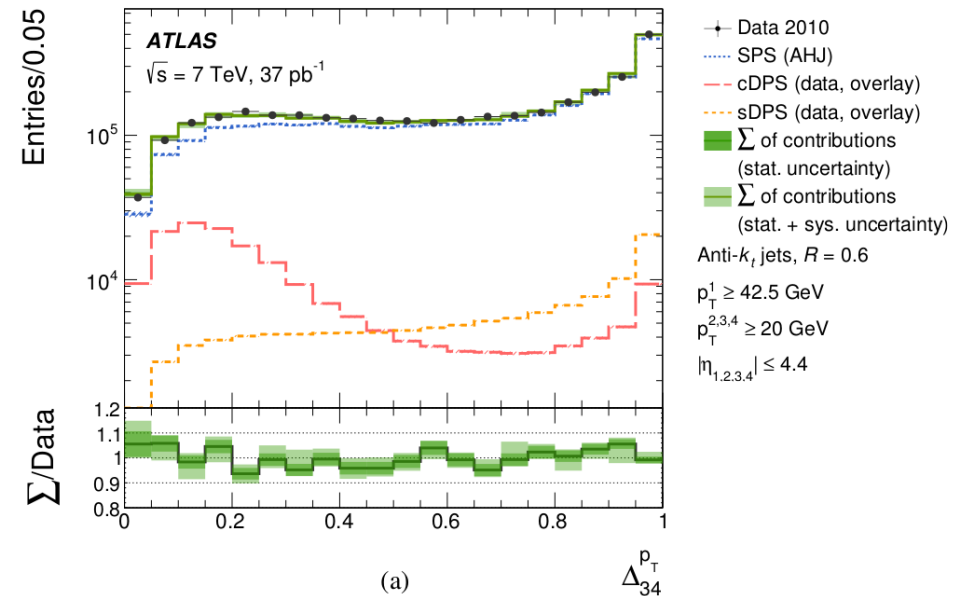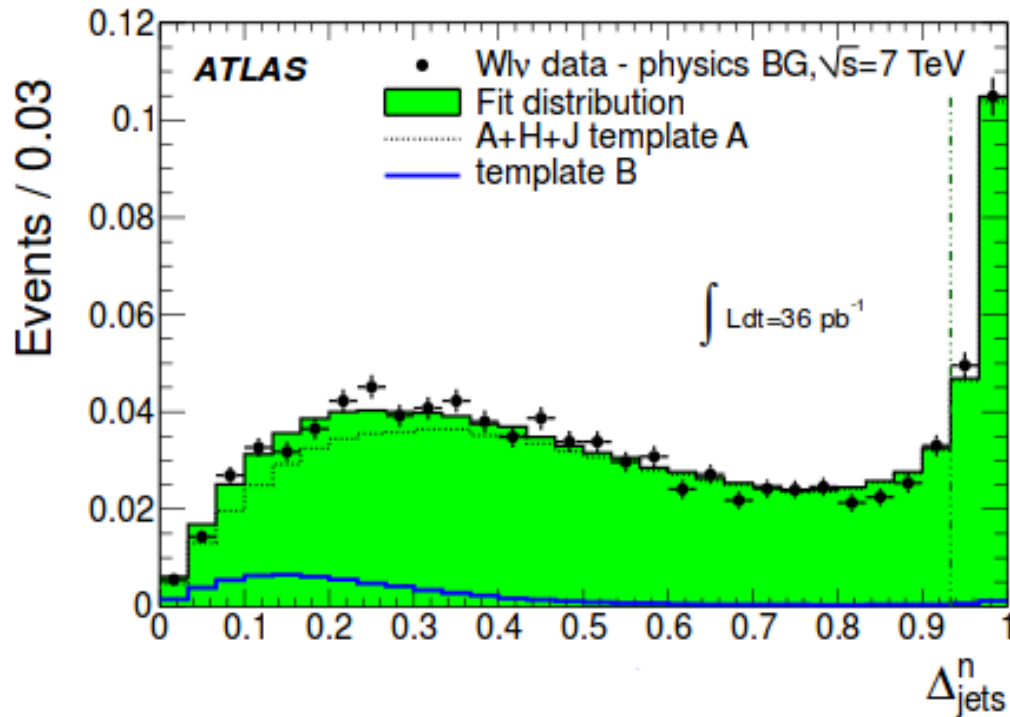# (Partial) Summary of DPS experimental session

Jonathan Gaunt, Paolo Gunnellini

OBSERVABLES FOR DPS-SENSITIVE MEASUREMENTS

Many measurements available by all experiments and differential distributions available
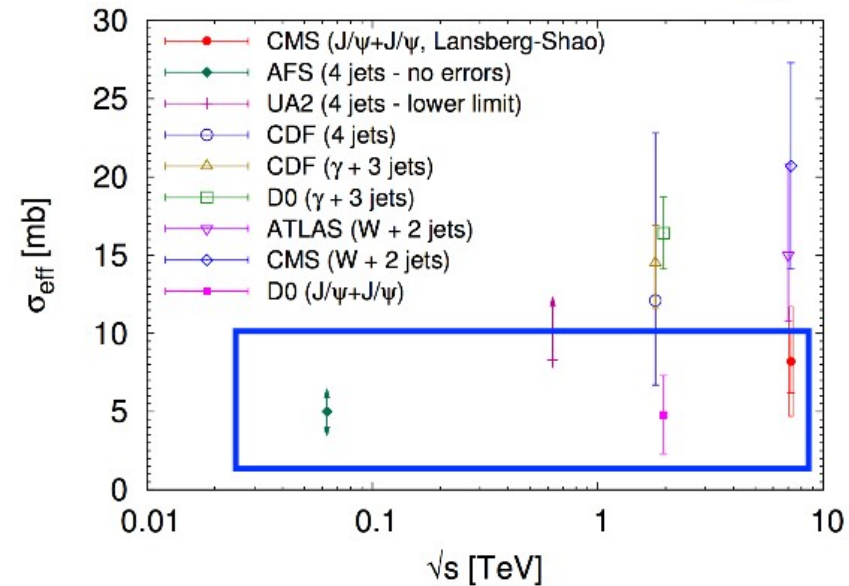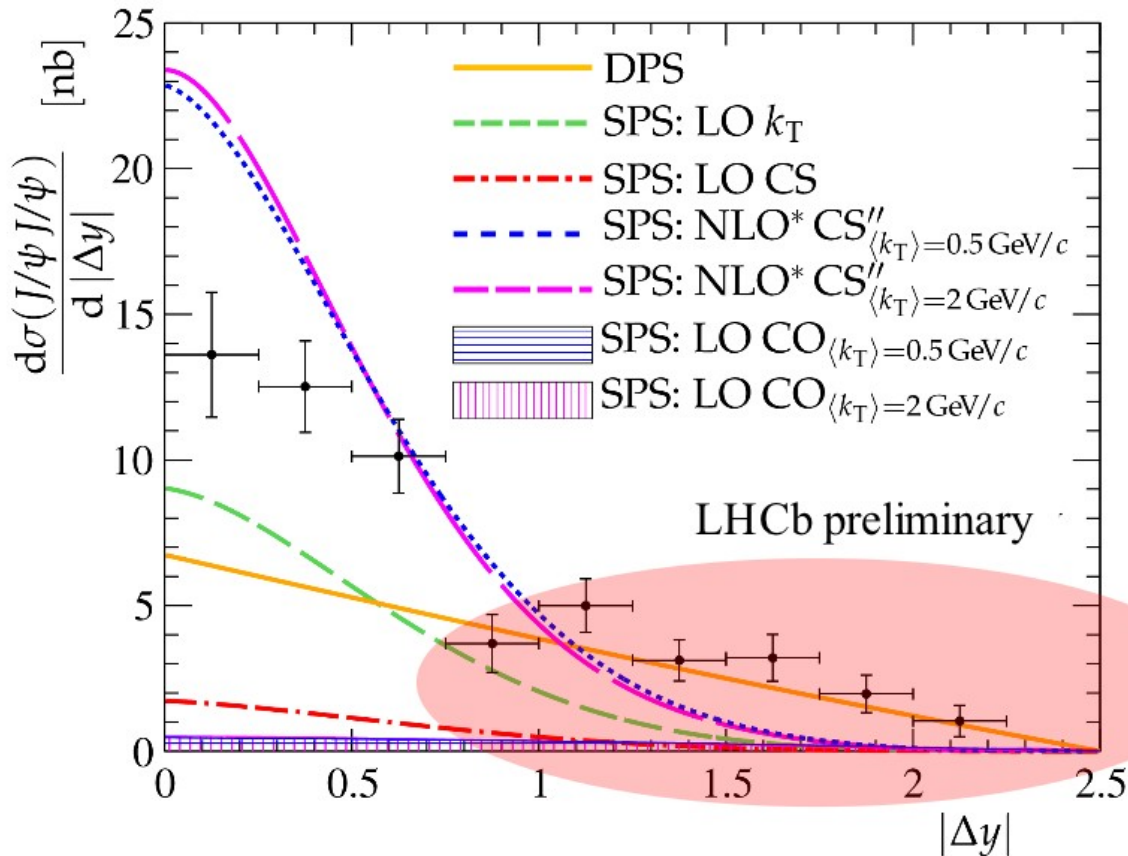
For DPS extraction, mainly the different topology of SPS and DPS events is investigated: pT balance, ΔΦ , ΔS...
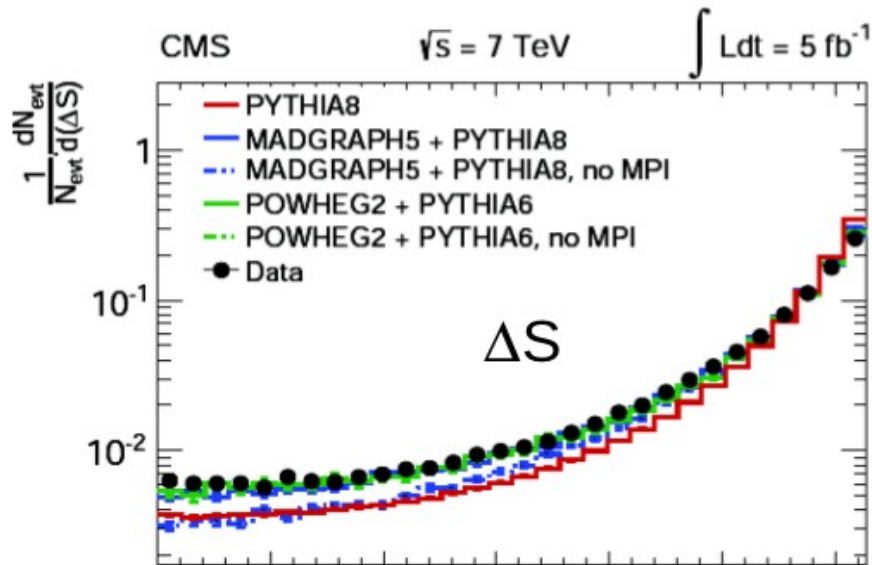
Can we find more observables?

First 13 TeV results!!

σ_eff comp. with 14.5 mb

In order to extract the DPS contribution, need for a reliable SPS background definition
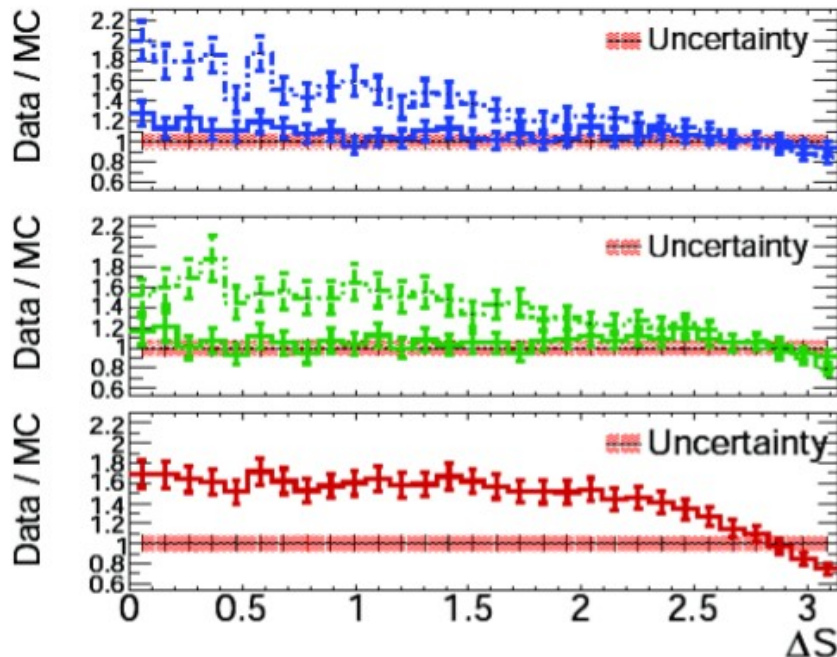**DPS signal is affected by that!**
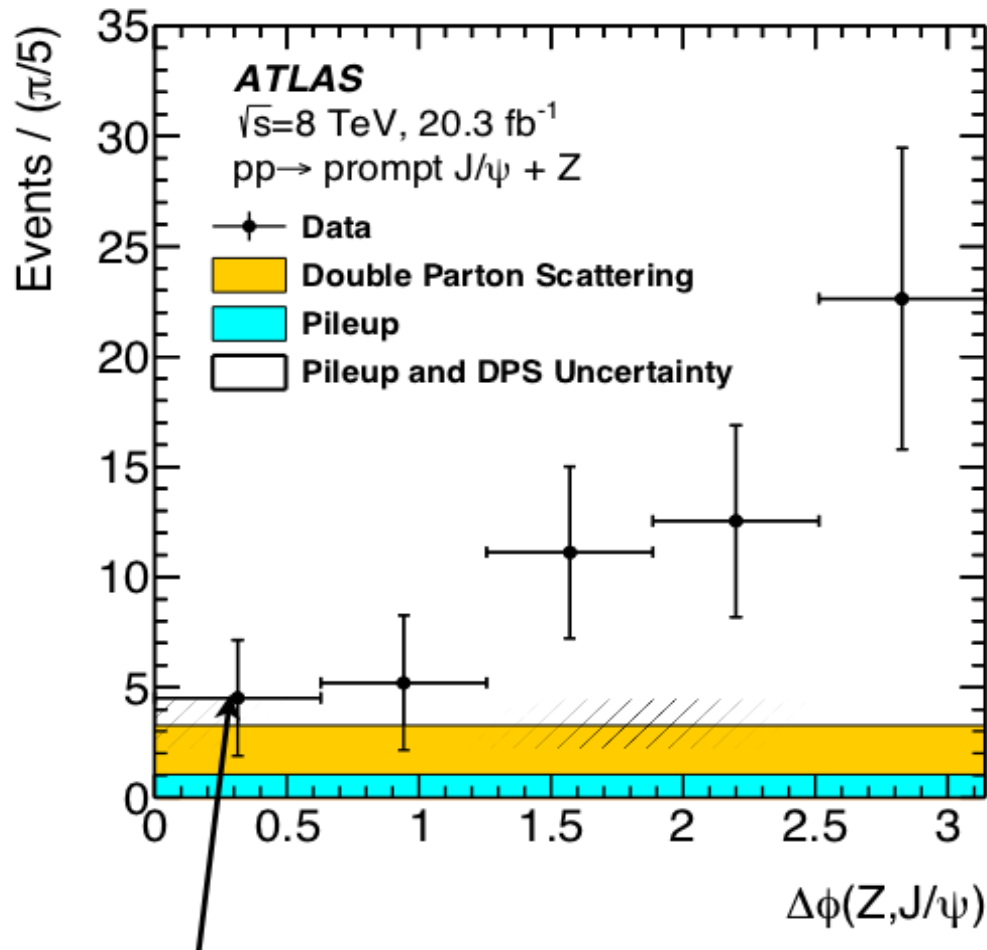
EXPERIMENTAL EXTRACTION OF SIGMA EFFECTIVE

Sigma effective is always (strongly) model (Monte Carlo) dependent!!!

σ_{eff} ~ 11 mb
(if P8 considered)

σ_{eff} ~ 20 mb
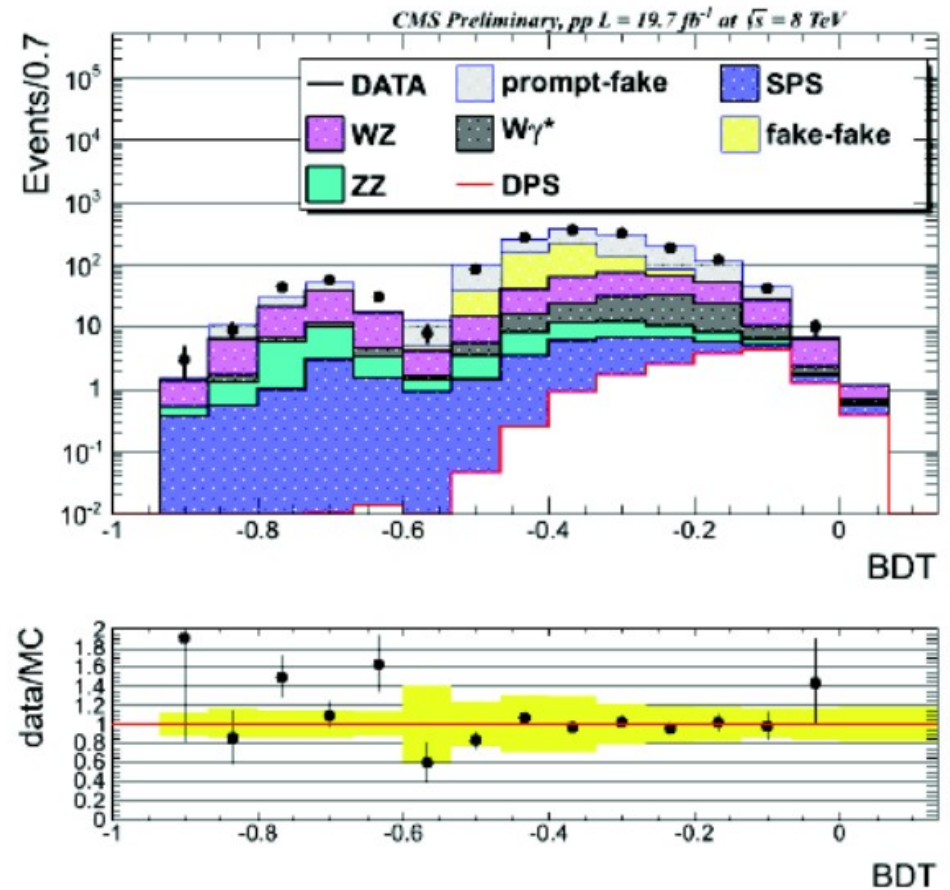(if MG + P8 considered)

More pure channels!

σ$_{eff}$ > 5.3 mb

σ$_{eff}$ > 5.91 mb

So far not enough statistics but very promising for Run II

Remarks

Experimental challenge is indeed to reduce the uncertainties..but this comes from σ_{eff} extraction, not always from the data

One should agree on a value of σ_{eff} to be used in measurements: perhaps the one measured at 7 or 13 TeV (and not the CDF result)

Very important that the differential Measured distributions are released in RIVET!

Questions

- **Need for new observables, sensitive to DPS for "old" and "new" channels?**

- **Triple parton scattering: is that realistic? Which channels can one use?**

- **Which data would be necessary to extract DPDs?**

- **Current statistics makes double differential cross sections feasible (in different x regimes, particle multiplicities, other?)**