# HERA and the LHC

## NLOLIB

WG5: MC Tools

# Where is it from?

- It originated from the need to adapt repeatedly the same analysis code for different NLO programs
  - Boring, error prone :-(
  - Participate in some Workshop :-)
- Workshop on MC Generators for HERA:

  „A common scheme for running NLO ep event generators“,

  Thomas Hadig (H1), Gavin McCance (ZEUS), hep-ph/9909491

# What is it?

- A reason to go to a Workshop :-)
- A set of Makefiles, Fortran, C, C++ routines, ...
- A container for slightly modified NLO programs
- A setup for compiling and linking these programs
- A tool for easier access for experimentalists
- A common interface to run these programs with your user code

# What does it for you?

- Compiling and linking on diverse UNIX platforms
- Unified access to the NLO event records
- Unified steering for common parametres (masses, ...)

  and settings (kinematics) when possible
- Showing how to run it and how to implement your own code with some example jobs
- Allowing comparisons to experimental results via HzTool

# What it doesn't ...

- Writing your analysis/code
- Preventing you to misuse the NLO programs
- Preventing you from making mistakes :-(
- But it renders it less probable and

  ... you do it wrong consistently :-)

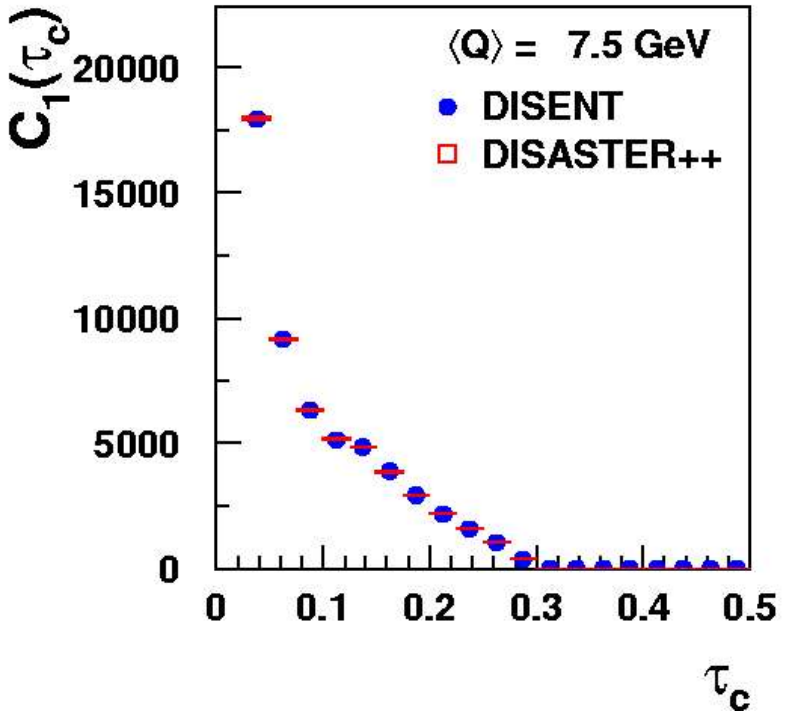
# What's in it?

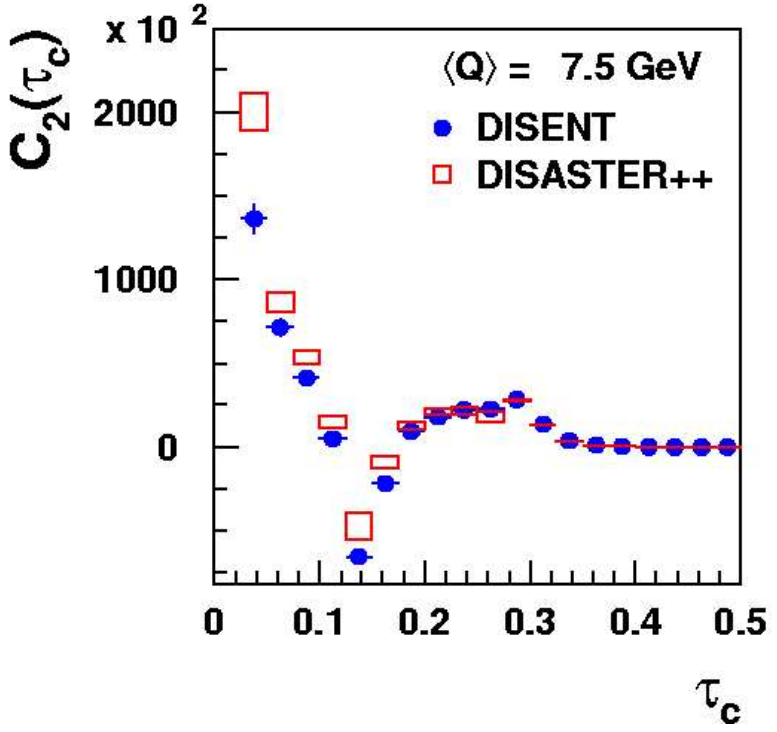
- ep Physics
  - DISASTER++ 1.0.1, D. Graudenz
  - DISENT 0.1, S. Catani, M. Seymour
  - MEPJET 2.2, E. Mirkes, D. Zeppenfeld, N.Kauer

  (We have one outstanding comput. problem with this version)
- ee Physics
  - RacoonWW, A.Denner, S. Dittmaier, M. Roth, D. Wackeroth

  (Newer version 1.3.1 available since last week, to do)

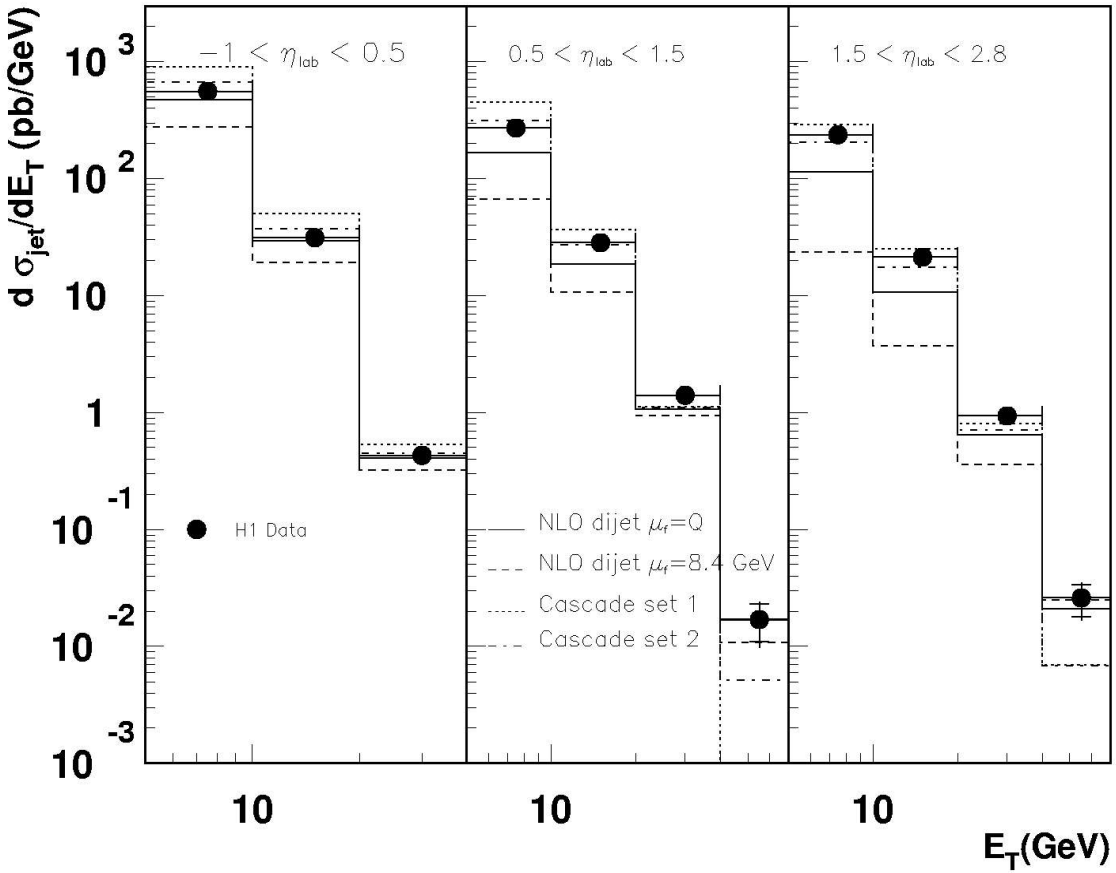
# What you may get ...




- Example of a comparison presented at DIS 2000:
  - c1 and c2 are the L and NL coefficients of the pert. Expansion
  - $\tau = (1-T)$ where T is a thrust like variable for ep scattering

# What you may get, too.




- Another advertise for HzTool
  - Incl. Jet cross section from Disent compared with Cascade and data using HzTool (from *Small x Phenomenology*, hep-ph/0312333)
- NLOLIB has an interface to HzTool as well

# What is missing?

- An updated release of what we have already
- A more modularized structure to plug in additional programs

  more easily
- An updated event record, maybe adopt the interface defined

  in Les Houches for ME -> PS Gen.: hep-ph/0109068
- Prominently, there's **nothing for LHC, yet**...
  - Now is the time to propose your candidate
  - The wish list is open ...
  - But beware, you may be asked to contribute ...

# Where do we go from here?

- To the next Workshop meeting :-)
- Short term plan: Update Release
- Mid term plan:
  - Refined modular structure
  - Inclusion of JetViP, NLOJET (Help from DESY colleagues ...)
  - Inclusion of pp NLO programs
- Long term plan: To be defined ...
  - Online plot updates, GUI ?

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