PAG: jet exercises

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DESY.

Inclusive and dijet measurements

- **General theory introduction + 3 exercises**

1. Trigger

- Compute trigger efficiency curves with 2 different methods (emulation/ tag and probe)
- Compute the turnon points in which the trigger is considered efficient

2. Jet energy corrections

- Plot the jet energy scale corrections, provided by JetMET, as a function of p_T and y
- Apply the jet energy scale to jets
- See the effect of the JEC on the inclusive jet p_T and y spectrum

Inclusive and dijet measurements

3. Unfolding

- Unfold Pythia with Pythia:
  - Plot the response matrix and compute the condition number
  - Compute bin-by-bin correction in two different scenarios, considering a corse and a fine binning:
    - Compare the results (diagonality response matrix, correlations between bins, statistical uncertainties)
  - Additional exercises: plot miss and fake rates, bottom line test…
- Evaluate the unfolding model dependence unfolding a MC generator (e.g. Pythia) with another (e.g. Herwig)
- Perform the unfolding on data
- Extract cross sections and compare to theory predictions