

Phenomenology and Monte Carlos

H.Jung (DESY)

- program and prospects for Phenomenology and Monte Carlo activities at DESY

Phenomenology and Monte Carlo

• Phenomenology

- MC developments including new approaches
 - CASCADE etc
- PS+ME matching: MC@NLO etc
- UE and Multi-parton Interactions: new and consistent approaches

• Monte Carlo tuning

- using existing published data
 - apply HZTOOL/RIVET frame for experiment independent MC tuning
 - determine PDF4MCs
- develop general strategy for tuning (which data, methods, tuning programs etc...)
- experiment dependent tunings using first LHC data
 - activities from experiments
 - goal to obtain common tunings

Resources required

- Phenomenology
 - 3-4 persons: postdocs, fellows
 - > 4 PhD students
- Monte Carlo tuning
 - 5-6 persons for tuning with published data before LHC start
 - 2-3 persons per experiment for the tuning with first LHC data

Plans

Monte Carlo and phenomenology school end of 2007

- Lectures on Monte Carlo techniques
- Lectures on Monte Carlo event generators
 - CASCADE, PYTHIA, HERWIG, SHERPA
- Exercises and practical work
 - introduction of HZTOOL/RIVET
 - calculation of W/Z, Higgs, top and jet production
- Lectures on NLO calculations