MCnet meeting

Monday 4 April 2016 - Wednesday 6 April 2016

Mariaspring/Goettingen

Book of Abstracts

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Cross Sections and Diffraction in Pythia8

Author: Christine Overgaard Rasmussen[1]

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Pythia8 is currently being updated with new descriptions of the total and elastic cross sections. An introduction to the framework will be given along with a presentation of the different parametrizations used. Similar updates are planned for the diffractive framework and will be discussed here as well along with a presentation of the new framework for hard diffraction, already available in Pythia8.

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H+Jets

Author: Peter Schichtel[1]

[1] *IPPP*

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Merging

Author: Johannes Bellm[1]

[1] *KIT*

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Shower Reweighting in Herwig 7

Author: Stephen James Webster[1]

[1] *CERN*

Corresponding Author: stephen.webster@cern.ch

In the computation of shower uncertainties, re-running a full Monte Carlo simulation for each set of input scales is very CPU intensive. The major experimental collaborations are therefore very interested in in-event scale variation. I will present a development of the veto algorithm to perform on-the-fly reweighting in the parton shower and review the progress of its implementation in Herwig 7. I will compare the results from scale variations in the parton showers obtained using the new reweighting method and the traditional full event generation approach.

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Introduction

Author: Stephen James Webster[1]

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Introduction talk for Stephen Webster.

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Diffractive excitation in proton/Lead collisions

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TBA.

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Shower Uncertainties

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Hello! MCnet

Author: Harsh Shah[1]

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Introduction of a new member.

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Associated production of single top quark and W boson

Author: Priyanka Priyanka[1]

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One important aspect of single top-quark production is the sensitivity to non-SM couplings of the Wtb vertex. It provides direct extraction of the magnitude of Vtb matrix element of the CKM matrix by just measuring its cross-section. Among all modes of single top-quark production, only the associated production of single top quark with W boson (tW-channel) provides the real W boson. However, main challenge to observe tW subprocess is the interference with the top-quarks pair production at NLO. To overcome this difficulty, two methods were proposed "Diagram Removal" and "Diagram Subtraction". The difference between the two is the measure of the size of interference. In this talk I'll explain the implementation of Diagram Removal & Diagram Subtraction in Herwig++.

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ATLAS V+jets and Heavy Flavour modelling

Author: Josh McFayden[1]

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Overview of the current state of V+jets and heavy flavour production modelling and measurement at the LHC by the ATLAS detector. An overview of the MC generators and setups currently used by ATLAS, discussion of their performance compared to existing data and an outline of future measurements planned or in progress. In addition, a specific look at heavy flavour production modelling, the current modelling issues observed, the associated systematic uncertainties on MC modelling and future plans for measurements to constrain this. These processes are important backgrounds for several LHC measurements and searches. For example, precise measurement of VH(H->bb) production is a very important Run 2 goal allowing accurate observation of the Higgs coupling to fermions for the first time. V+jets (including heavy flavour) production is a dominant background in this measurement and the associated MC modelling uncertainty is one of the dominant uncertainties.

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Herwig-Parallel patch for Rivet 2.4.0 and YODA 1.5.5

Author: Radek Podskubka[1]

[1] *Acad. of Sciences of the Czech Rep. (CZ)*

Abstract: Due to the need of high statistics in case of certain high energy physics processes, CPU time used by Monte Carlo event generators grow and parallelization of the event production runs is necessary. Herwig-Parallel patches Rivet 2.4.0 to ensure proper statistical handling of multiple output of parallel runs and its merging. The patch is based on former work made by Daniel Rauch.

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H+Jets

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Associated production of single top quark and W boson

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ATLAS V+jets and Heavy Flavour modelling

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Hello! MCnet

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Introduction

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Shower Reweighting in Herwig 7

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Merging

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Shower Uncertainties

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Cross Sections and Diffraction in Pythia8

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Diffractive excitation in proton/Lead collisions

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Herwig-Parallel patch for Rivet 2.4.0 and YODA 1.5.5

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Introduction

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Second session / **23**

Introduction to MCnet

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MCnet living resource

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Introduction

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Introduction

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Introduction

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Sixth session / **28**

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Sixth session / **30**

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Sixth session / **31**

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