15th MCnet Meeting

Wednesday 05 April 2017 - Friday 07 April 2017

CERN

Book of Abstracts

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A summary of recent ATLAS measurement useful for MC modelling improvements

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TBA

Session 2 / **8**

Automating Basis Reduction for Effective Lagrangians in FeynRules

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Accounting for redundancies among higher-dimensional operators is necessary in any Effective Field Theory, and has historically been a source of confusion in its applications to the Standard Model. Even while the procedure is now well-understood, reducing an arbitrary set of operators onto an agreed basis is still a time-consuming step arising in matching a given UV completion to an EFT, and at each order in perturbation theory where this plays a key role in renormalizing the theory.

Emulating the procedure used to derive the 'Warsaw' basis of the dimension-six SMEFT, work to automate this reduction will be discussed using FeynRules, with the aim of providing a tool which will be useful in SMEFT calculations and lend itself to future generalization, e.g. to the construction of operator bases for theories beyond the SM, and eliminating redundancies in operators of still higher mass dimension.

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CONTUR overview and plans

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Discussion: Format for the MCnet Annual Schools

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Heavy ion analysis requirements

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Heavy-ion collisions and Single Diffractive Events

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TBA

Session 1 / **2**

Introduction

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Introductory Talk.

Session 4 / **11**

Introduction to CEDAR

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Session 3 / **6**

NLO+PS gg→ZZ→e+e−μ+μ− production with POWHEG

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I will present a calculation of the next-to-leading order (NLO) QCD corrections to the hadroproduction process gg→ZZ→e+e−μ+μ−, matched to the parton shower in the POWHEG framework.

Session 4 / **15**

Professor tuning and BSM

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Session 3 / **3**

Recursive Soft Drop

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We introduce a new jet substructure method based on a recursive iteration of the Soft Drop algorithm. The recursive soft drop algorithm introduces an additional parameter N to define the number of layers of soft drop declustering, providing an optimized grooming strategy for boosted objects with (N+1)-prong decays, as well as improved stability in high pileup conditions. We discuss the infinite N limit, where groomed jets have a null area, and investigate their properties. We show promising applications to jet mass resolution in boosted top and W bosons, and demonstrate how recursive soft drop grooming can substantially mitigate pileup effects when used in conjunction with existing pileup-removal methods.

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Results from UCL projects

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Rivet for BSM reinterpretation

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Rivet overview and plans

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Student and Postdoc only session

Session 1 / **1**

Towards general purpose heavy ion generators and > microscopic collectivity

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TBA - Something involving heavy ions, Work In Progress.

Project meetings / **17**

Update/changes for JHEP

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In dealing with the referees comments for JHEP we found a couple of issues, which we'll discuss.