

LoopFest XV

Report of Contributions

Contribution ID: 1

Type: **not specified**

Soft Gluon Resummation for associated $t\bar{t}H$ Production at the LHC

We perform resummation of soft gluon corrections to the total cross section for the process $pp \rightarrow t\bar{t}h$. The resummation is carried out at next-to-leading-logarithmic (NLL) accuracy using the Mellin space technique, extending its application to the class of $2 \rightarrow 3$ processes. We present an analytical result for the soft anomalous dimension for a hadronic production of two coloured massive particles in association with a colour singlet. We discuss the impact of resummation on the numerical prediction for the associated Higgs boson production with top quarks at the LHC.

Primary author: THEEUWES, Vincent (SUNY, Buffalo)

Presenter: THEEUWES, Vincent (SUNY, Buffalo)

Contribution ID: 17

Type: **not specified**

Poking the Standard Model

Monday, August 15, 2016 8:30 AM (25 minutes)

Presenter: Prof. HUSTON, Joey (Michigan State University)

Session Classification: Session 1

Contribution ID: **18**

Type: **not specified**

Recent developments in Sherpa

Tuesday, August 16, 2016 12:35 PM (25 minutes)

Presenter: Mr HOECHE, Stefan (SLAC)

Session Classification: Session VI

Contribution ID: 19

Type: **not specified**

Electroweak Sudakov for virtual and real corrections

Tuesday, August 16, 2016 4:25 PM (25 minutes)

Presenter: Dr BAUER, Christian (LBNL)

Session Classification: Session VIII

Contribution ID: 20

Type: **not specified**

Evaluation of the general 3-loop vacuum Feynman integral

Monday, August 15, 2016 10:55 AM (25 minutes)

Presenter: Prof. MARTIN, Stephen (Northern Illinois University)

Session Classification: Session II

Contribution ID: 21

Type: **not specified**

Finite fields and progress on four loop form factors

Monday, August 15, 2016 11:20 AM (25 minutes)

Presenter: VON MANTEUFFEL, Andreas (University of Mainz)

Session Classification: Session II

Contribution ID: 22

Type: **not specified**

New numerical techniques for two and threeloop integrals and applications

Monday, August 15, 2016 11:45 AM (25 minutes)

Presenter: FREITAS, Ayres (University of Pittsburgh)

Session Classification: Session II

Contribution ID: 23

Type: **not specified**

Towards a numerical unitarity approach at two loops in QCD

Monday, August 15, 2016 12:10 PM (25 minutes)

Presenter: JAQUIER, Matthieu (Physik-Institut, Universität Zürich)

Session Classification: Session II

Contribution ID: 24

Type: **not specified**

(B)SM Higgs Boson Production via Gluon Fusion

Monday, August 15, 2016 2:00 PM (25 minutes)

Presenter: Mr SCHMIDT, Timo (University of Freiburg)

Session Classification: Session III

Contribution ID: 25

Type: **not specified**

Differential Distributions for Precision Higgs Physics

Monday, August 15, 2016 2:25 PM (25 minutes)

Presenter: Dr MISTLBERGER, Bernhard (CERN)

Session Classification: Session III

Contribution ID: 26

Type: **not specified**

The Higgs boson at high p_T

Monday, August 15, 2016 2:50 PM (25 minutes)

Presenter: NEUMANN, Tobias (University at Buffalo)

Session Classification: Session III

Contribution ID: 27

Type: **not specified**

A Study of Weak Corrections to Drell-Yan, Top-quark pair and Di-jet Production at High Energies at the LHC with MCFM

Tuesday, August 16, 2016 4:50 PM (25 minutes)

Presenter: ZHOU, Jia

Session Classification: Session VIII

Contribution ID: 28

Type: **not specified**

Light quark mass effects in Higgs boson production in gluon fusion

Monday, August 15, 2016 4:25 PM (25 minutes)

Presenter: Prof. PENIN, Alexander (University of Alberta)

Session Classification: Session IV

Contribution ID: 29

Type: **not specified**

CP even scalar via gg fusion at the LHC

Monday, August 15, 2016 5:15 PM (25 minutes)

Presenter: Dr FURLAN, Elisabetta (Fermi National Accelerator Laboratory)

Session Classification: Session IV

Contribution ID: 30

Type: **not specified**

NLO corrections to Higgs boson pair production in gluon fusion with full top quark mass dependence

Wednesday, August 17, 2016 2:05 PM (25 minutes)

Presenter: Dr KERNER, Matthias (Max Planck Institute for Physics)

Session Classification: Session XI

Contribution ID: 31

Type: **not specified**

Soft Gluon Resummation for associated ttH Production at the LHC

Monday, August 15, 2016 4:50 PM (25 minutes)

Presenter: THEEUWES, Vincent (SUNY, Buffalo)

Session Classification: Session IV

Contribution ID: 32

Type: **not specified**

Automating oneloop corrections for general models in RECOLA

Tuesday, August 16, 2016 8:30 AM (25 minutes)

Presenter: LANG, Jean-Nicolas (University of Wuerzburg)

Session Classification: Session V

Contribution ID: 33

Type: **not specified**

NLO Corrections to VV production through gluon fusion

Tuesday, August 16, 2016 8:55 AM (25 minutes)

Presenter: Dr ROENTSCH, Raoul (Karlsruhe Institute of Technology)

Session Classification: Session V

Contribution ID: 34

Type: **not specified**

NLO QCD effects in the fully offshell process $e^+ e^- \rightarrow b\bar{b} l\nu l\nu(H)$ with WHIZARD

Tuesday, August 16, 2016 9:20 AM (25 minutes)

Presenter: WEISS, Christian (Desy Hamburg)

Session Classification: Session V

Contribution ID: 35

Type: **not specified**

Factorization and resummation for jet processes

Tuesday, August 16, 2016 10:55 AM (25 minutes)

Presenter: NEUBERT, Matthias (Johannes Gutenberg University Mainz)

Session Classification: Session VI

Contribution ID: 37

Type: **not specified**

Transverse momentum resummation for Higgs production at N3LL

Tuesday, August 16, 2016 11:20 AM (25 minutes)

Presenter: Dr ZHU, Hua Xing (MIT)

Session Classification: Session VI

Contribution ID: 38

Type: **not specified**

Jet veto resummation for WW production at approximate NNNLL+NNLO

Tuesday, August 16, 2016 11:45 AM (25 minutes)

Presenter: ZENG, Mao (UC Los Angeles)

Session Classification: Session VI

Contribution ID: 39

Type: **not specified**

High order and loop results for top quark production

Tuesday, August 16, 2016 12:10 PM (25 minutes)

Presenter: Prof. KIDONAKIS, Nikolaos (Kennesaw State University)

Session Classification: Session VI

Contribution ID: **61**

Type: **not specified**

Charm in the proton

Monday, August 15, 2016 8:55 AM (25 minutes)

Presenter: Prof. BALL, Richard (University of Edinburgh)

Session Classification: Session 1

Contribution ID: 62

Type: **not specified**

Massive operator matrix elements at 3-loop order for deep-inelastic scattering

Monday, August 15, 2016 12:35 PM (25 minutes)

Presenter: BEHRING, Arnd (DESY)

Session Classification: Session II

Contribution ID: 63

Type: **not specified**

High energy resummation and the Higgs p_t spectrum

Monday, August 15, 2016 3:15 PM (25 minutes)

Presenter: Dr FORTE, Stefano (Dipartimento di Fisica, Universita' di Milano and INFN, Sezione di Milano)

Session Classification: Session III

Contribution ID: 64

Type: **not specified**

Electroweak renormalization of the Higgs singlet extension

Monday, August 15, 2016 5:40 PM (25 minutes)

Presenter: ROBENS, Tania (IKTP, TU Dresden)

Session Classification: Session IV

Contribution ID: 65

Type: **not specified**

How bright is the proton?

Monday, August 15, 2016 9:20 AM (25 minutes)

Presenter: Prof. ZANDERIGHI, Giulia (CERN/Oxford Univ.)

Session Classification: Session 1

Contribution ID: 66

Type: **not specified**

Collier: a Complex OneLoop Library in Extended Regularizations

Tuesday, August 16, 2016 9:45 AM (25 minutes)

Presenter: HOFER, Lars (UB Barcelona)

Session Classification: Session V

Contribution ID: 67

Type: **not specified**

QCD and EW NLO corrections with NLOX

Tuesday, August 16, 2016 10:10 AM (25 minutes)

Presenter: Dr REUSCHLE, Christian (Florida State University)

Session Classification: Session V

Contribution ID: 68

Type: **not specified**

Relating the top quark \overline{MS} and onshell masses

Monday, August 15, 2016 9:45 AM (25 minutes)

Presenter: MARQUARD, Peter (DESY)

Session Classification: Session 1

Contribution ID: **69**

Type: **not specified**

MCFM at NNLO

Tuesday, August 16, 2016 2:00 PM (25 minutes)

Presenter: Dr GIELE, Walter (Fermilab)

Session Classification: Session VII

Contribution ID: 70

Type: **not specified**

Z+jet production at NNLO QCD

Tuesday, August 16, 2016 2:25 PM (25 minutes)

Presenter: Mr HUSS, Alexander (University of Freiburg)

Session Classification: Session VII

Contribution ID: 71

Type: **not specified**

NNLO phenomenology using jettiness subtraction

Tuesday, August 16, 2016 2:50 PM (25 minutes)

Presenter: Dr LIU, Xiaohui (Argonne National Lab and Northwestern University)

Session Classification: Session VII

Contribution ID: 72

Type: **not specified**

Fully differential NNLO(+NNLL) computations with MATRIX

Tuesday, August 16, 2016 3:15 PM (25 minutes)

Presenter: Dr WIESEMANN, Marius (University of Zürich)

Session Classification: Session VII

Contribution ID: 73

Type: **not specified**

Fully differential QCD predictions at NNLO using STRIPPER

Tuesday, August 16, 2016 3:40 PM (25 minutes)

Presenter: Mr HEYMES, David (University of Cambridge)

Session Classification: Session VII

Contribution ID: 74

Type: **not specified**

Extended electroweak precision fits and their implications

Monday, August 15, 2016 3:40 PM (25 minutes)

Presenter: REINA, Laura (Florida State University)

Session Classification: Session III

Contribution ID: 75

Type: **not specified**

Two Loop Master Integrals for the mixed EW-QCD virtual corrections to DrellYan scattering

Tuesday, August 16, 2016 5:15 PM (25 minutes)

Presenter: Dr DI VITA, Stefano (DESY)

Session Classification: Session VIII

Contribution ID: 76

Type: **not specified**

Electroweak corrections to V +jets production

Tuesday, August 16, 2016 5:40 PM (25 minutes)

Presenter: Mr SCHOENHERR, Marek (University of Zurich)

Session Classification: Session VIII

Contribution ID: 77

Type: **not specified**

The OneLoop Correction to Heavy Dark Matter Annihilation

Monday, August 15, 2016 10:10 AM (25 minutes)

Presenter: Mr RODD, Nicholas (Massachusetts Institute of Technology)

Session Classification: Session 1

Contribution ID: 78

Type: **not specified**

QFT Scattering Amplitudes from Riemann Surfaces

Wednesday, August 17, 2016 8:30 AM (25 minutes)

Presenter: Prof. CACHAZO, Freddy (Perimeter Institute)

Session Classification: Session IX

Contribution ID: 79

Type: **not specified**

Differential equations and dispersion relations for Feynman amplitudes

Wednesday, August 17, 2016 8:55 AM (25 minutes)

Presenter: Dr TANCREDI, Lorenzo (KIT Karlsruhe)

Session Classification: Session IX

Contribution ID: **80**

Type: **not specified**

Adaptive Integrand Decomposition of multi-loop scattering amplitudes

Wednesday, August 17, 2016 9:45 AM (25 minutes)

Presenter: Mr PRIMO, Amedeo (Università di Padova- INFN Sezione di Padova)

Session Classification: Session IX

Contribution ID: **81**

Type: **not specified**

d-Dimensional Generalised Unitarity and Colour Kinematics duality

Wednesday, August 17, 2016 9:20 AM (25 minutes)

Presenter: TORRES BOBADILLA, William Javier (University of Padua)

Session Classification: Session IX

Contribution ID: 82

Type: **not specified**

Iterated integrals in Multi-Regge kinematics

Wednesday, August 17, 2016 10:10 AM (25 minutes)

Presenter: Mr DULAT, Falko (ETH Zurich)

Session Classification: Session IX

Contribution ID: 83

Type: **not specified**

Hadronic contributions to the muon anomalous magnetic moment using lattice QCD

Wednesday, August 17, 2016 10:55 AM (25 minutes)

Presenter: BLUM, Thomas (University of Connecticut)

Session Classification: Session X

Contribution ID: **84**

Type: **not specified**

Four loop Electronic contributions to the anomalous magnetic moment of the muon

Wednesday, August 17, 2016 11:20 AM (25 minutes)

Presenter: Dr LIU, Tao (Department of Physics University of Alberta)

Session Classification: Session X

Contribution ID: 85

Type: **not specified**

Radiative correction to the bound electron g factor

Wednesday, August 17, 2016 11:45 AM (25 minutes)

Presenter: CZARNECKI, Andrzej (University of Alberta)

Session Classification: Session X

Contribution ID: **86**

Type: **not specified**

Decay of a bound muon

Wednesday, August 17, 2016 12:10 PM (25 minutes)

Presenter: Dr SZAFRON, Robert (U. of Alberta)

Session Classification: Session X

Contribution ID: 87

Type: **not specified**

Higgs Physics and the Singlet Extended Standard Model

Wednesday, August 17, 2016 1:40 PM (25 minutes)

Presenter: LEWIS, Ian (Brookhaven National Laboratory)

Session Classification: Session XI

Contribution ID: **88**

Type: **not specified**

Closing talk

Wednesday, August 17, 2016 2:30 PM (30 minutes)

Presenter: Prof. PETRIELLO, Frank (Northwestern University)

Session Classification: Session XI

Contribution ID: 89

Type: **not specified**

Finite integrals and progress on the four-loop form factors in massless QCD

Wednesday, August 17, 2016 1:15 PM (25 minutes)

Presenter: SCHABINGER, Robert (Johannes Gutenberg University)

Session Classification: Session XI