

**XXVI Cracow EPIPHANY  
Conference, LHC Physics:  
Standard Model and Beyond**

**Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Machine Learning PDFs

*Tuesday, 7 January 2020 09:30 (50 minutes)*

**Presenter:** FORTE, Stefano (Università degli Studi e INFN Milano (IT))

**Session Classification:** Partonic calculations

Contribution ID: 2

Type: **not specified**

## Soft QCD at ATLAS and CMS

**Presenter:** Mr KULCHITSKY, Yuri

**Session Classification:** Partonic calculations

Contribution ID: 3

Type: **not specified**

## **Kacper as my mentor**

*Tuesday, 7 January 2020 14:30 (20 minutes)*

**Presenter:** JEZABEK, Marek (Polish Academy of Sciences (PL))

**Session Classification:** prof. Zalewski laudare

Contribution ID: 4

Type: **not specified**

## **My life with Kacper Z.**

*Tuesday, 7 January 2020 14:50 (40 minutes)*

**Presenter:** BIALAS, Andrzej

**Session Classification:** prof. Zalewski laudare

Contribution ID: 5

Type: **not specified**

## **Cake & others**

*Tuesday, 7 January 2020 15:30 (1 hour)*

**Session Classification:** prof. Zalewski laudare

Contribution ID: 6

Type: **not specified**

## **Precision measurements of the Electroweak theory**

*Friday, 10 January 2020 09:00 (30 minutes)*

**Presenter:** SIRAL, Ismet (University of Oregon (US))

**Session Classification:** Electroweak physics

Contribution ID: 7

Type: **not specified**

## **High-precision for high-energy tails**

**Presenter:** LINDERT, Jonas (University of Sussex)

**Session Classification:** Electroweak physics



Contribution ID: 8

Type: **not specified**

## Recent Higgs boson measurements

*Tuesday, 7 January 2020 16:30 (30 minutes)*

**Presenter:** D'AURIA, Saverio (Università degli Studi e INFN Milano (IT))

**Session Classification:** Higgs Physics

Contribution ID: 9

Type: **not specified**

## **Vacuum energy with mass generation and Higgs bosons**

**Presenter:** BASS, Steven (Jagiellonian University (PL))

**Session Classification:** Higgs Physics

Contribution ID: **10**

Type: **not specified**

## **Higgs cross section measurements in the four lepton final state at CMS**

**Presenter:** JAVAID, Tahir (Chinese Academy of Sciences (CN))

**Session Classification:** Higgs Physics

Contribution ID: 11

Type: **not specified**

## Flavour Anomalies

*Wednesday, 8 January 2020 09:00 (30 minutes)*

**Presenter:** PATEL, Mitesh (Imperial College (GB))

**Session Classification:** Flavour Physics

Contribution ID: 12

Type: **not specified**

## **Leptonic and semileptonic B decays from Belle**

*Wednesday, 8 January 2020 09:30 (30 minutes)*

**Presenter:** KWON, Youngjoon (Yonsei University)

**Session Classification:** Flavour Physics

Contribution ID: 13

Type: **not specified**

## **Overview of heavy flavour results from LHCb experiment**

*Wednesday, 8 January 2020 10:00 (30 minutes)*

**Presenter:** SCHILLER, Manuel Tobias (University of Glasgow (GB))

**Session Classification:** Flavour Physics

Contribution ID: 14

Type: **not specified**

## **Physics opportunities with a future soft particle tracker in LHCb**

*Wednesday, 8 January 2020 11:00 (30 minutes)*

**Presenter:** DA SILVA, Cesar Luiz (Los Alamos National Laboratory (US))

**Session Classification:** Flavour Physics

Contribution ID: 15

Type: **not specified**

## **Belle II status and Prospect**

*Wednesday, 8 January 2020 11:30 (30 minutes)*

**Presenter:** DOLEZAL, Zdenek (Charles University (CZ))

**Session Classification:** Flavour Physics



Contribution ID: 16

Type: **not specified**

## **Test of Lepton Universality with $L_b \rightarrow pK\ell\ell$ decays**

*Wednesday, 8 January 2020 12:00 (30 minutes)*

**Presenter:** MARIN BENITO, Carla (Centre National de la Recherche Scientifique (FR))

**Session Classification:** Flavour Physics

Contribution ID: 17

Type: **not specified**

## **Physics opportunities with a future soft particle tracker in LHCb**

**Presenters:** DA SILVA, Cesar Luiz (Los Alamos National Laboratory (US)); Dr DA SILVA, Cesar Luiz (Los Alamos National Lab)

**Session Classification:** Flavour Physics

Contribution ID: 18

Type: **not specified**

## **Production of $\nu_{\tau}$ and $\bar{\nu}_{\tau}$ in fixed target experiment SHiP**

*Wednesday, 8 January 2020 16:15 (25 minutes)*

**Presenter:** MACIULA, Rafal (Institute of Nuclear Physics PAN)

**Session Classification:** Strong interactions @ LHC

Contribution ID: 19

Type: **not specified**

## **Production of vector mesons in $pp \rightarrow ppV$ reactions with electromagnetic proton dissociation**

*Wednesday, 8 January 2020 17:05 (25 minutes)*

**Presenter:** CISEK, Anna (University of Rzeszow)

**Session Classification:** Strong interactions @ LHC

Contribution ID: 20

Type: **not specified**

## **Comments on the space-time evolution of the system created in the nucleus-nucleus collision at high energy.**

*Wednesday, 8 January 2020 15:50 (25 minutes)*

**Presenter:** RYBICKI, Andrzej (Polish Academy of Sciences (PL))

**Session Classification:** Strong interactions @ LHC

Contribution ID: 21

Type: **not specified**

## **Searching for odderon in central exclusive processes at the LHC**

**Presenter:** LEBIEDOWICZ, Piotr (Institute of Nuclear Physics PAN)

**Session Classification:** Strong interactions @ LHC

Contribution ID: 22

Type: **not specified**

**From transition electromagnetic form factors  
 $\gamma^*\gamma^*\eta_c(1S, 2S)$  to the production of  $\eta_c(1S, 2S)$  at the  
LHC**

*Friday, 10 January 2020 14:00 (30 minutes)*

**Presenter:** SZCZUREK, Antoni (Institute of Nuclear Physics)

**Session Classification:** Strong interactions @ LHC

Contribution ID: 23

Type: **not specified**

## **On the Possibility of Having Roman Pots around LHC IP8 in Run 4 and Beyond**

*Friday, 10 January 2020 14:30 (30 minutes)*

**Presenter:** TRZEBINSKI, Maciej (Polish Academy of Sciences (PL))

**Session Classification:** Strong interactions @ LHC



Contribution ID: 24

Type: **not specified**

## **Production of heavy particle pairs via photon-photon processes at the LHC**

*Friday, 10 January 2020 16:00 (30 minutes)*

**Presenter:** LUSZCZAK, Marta (University of Rzeszow)

**Session Classification:** Strong interactions @ LHC

Contribution ID: 25

Type: **not specified**

## **On the universality of the MC factorisation scheme**

*Tuesday, 7 January 2020 10:20 (35 minutes)*

**Presenter:** JADACH, Staszek (Polish Academy of Sciences (PL))

**Session Classification:** Partonic calculations

Contribution ID: 26

Type: **not specified**

## **Forward-backward correlations and multiplicity fluctuations in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV from ALICE at the LHC.**

*Friday, 10 January 2020 15:00 (30 minutes)*

**Presenter:** SPUTOWSKA, Iwona Anna (Polish Academy of Sciences (PL))

**Session Classification:** Strong interactions @ LHC

Contribution ID: 27

Type: **not specified**

## Exotic New Physics searches

*Thursday, 9 January 2020 09:30 (30 minutes)*

**Presenter:** OH, Alexander (University of Manchester (GB))

**Session Classification:** New Physics

Contribution ID: 28

Type: **not specified**

## **Experimental results in the Extended Higgs sector**

*Thursday, 9 January 2020 10:00 (30 minutes)*

**Presenter:** GERLACH, Lino Oscar (Georg August Universitaet Goettingen (DE))

**Session Classification:** New Physics

Contribution ID: 29

Type: **not specified**

## **b->sl transitions at LHCb**

*Thursday, 9 January 2020 14:00 (12 minutes)*

**Presenter:** BORSUK, Jozef Tomasz (Polish Academy of Sciences (PL))

**Session Classification:** young scientist session

Contribution ID: **30**

Type: **not specified**

## **Particle Correlations at LHCb**

*Thursday, 9 January 2020 14:12 (12 minutes)*

**Presenter:** ZDYBAL, Milosz (Polish Academy of Sciences (PL))

**Session Classification:** young scientist session

Contribution ID: 31

Type: **not specified**

## Exotic searches at LHCb

*Thursday, 9 January 2020 14:24 (12 minutes)*

**Presenter:** GONCERZ, Mateusz Jacek (AGH University of Science and Technology (PL))

**Session Classification:** young scientist session



Contribution ID: 32

Type: **not specified**

## **Tests of lepton flavour universality in $b \rightarrow c l \nu$ at the LHCb experiment**

*Thursday, 9 January 2020 14:36 (12 minutes)*

**Presenter:** MELONI, Simone (Universita & INFN, Milano-Bicocca (IT))

**Session Classification:** young scientist session

Contribution ID: 33

Type: **not specified**

## **Diamond detectors for radiation monitoring and beam abort at Belle II**

*Thursday, 9 January 2020 14:48 (12 minutes)*

**Presenter:** MANFREDI, Riccardo

**Session Classification:** young scientist session

Contribution ID: 34

Type: **not specified**

## **Investigation of magnetic field inside Belle II spectrometer**

*Thursday, 9 January 2020 15:00 (12 minutes)*

**Presenter:** BACHER, Szymon

**Session Classification:** young scientist session

Contribution ID: 35

Type: **not specified**

## **Alignment studies at Belle II Vertex detector**

*Thursday, 9 January 2020 15:12 (12 minutes)*

**Presenter:** KANDRA, Jakub (Charles University)

**Session Classification:** young scientist session

Contribution ID: 36

Type: **not specified**

## **B->Kpipigamma analysis in the Belle II Experiment**

*Thursday, 9 January 2020 15:24 (12 minutes)*

**Presenter:** KNYSH, Borys (National Taras Shevchenko Univ. of Kyiv (UA))

**Session Classification:** young scientist session

Contribution ID: 37

Type: **not specified**

## **Search for a new Heavy Resonance in final states with dijets or dibjets with the ATLAS Detector**

*Thursday, 9 January 2020 16:15 (12 minutes)*

**Presenter:** DONG, Binbin (Shanghai Jiao Tong University (CN))

**Session Classification:** young scientist session

Contribution ID: 38

Type: **not specified**

## **Search for heavy neutral leptons using prompt and displaced signatures with the ATLAS detector**

*Thursday, 9 January 2020 16:27 (12 minutes)*

**Presenter:** MICHETTI, Michele (Humboldt University of Berlin (DE))

**Session Classification:** young scientist session

Contribution ID: 39

Type: **not specified**

## **Search for lepton-flavor violation in high-mass dilepton final states with the ATLAS detector**

*Thursday, 9 January 2020 16:39 (12 minutes)*

**Presenter:** GAO, Jun (University of Science and Technology of China (CN))

**Session Classification:** young scientist session



Contribution ID: 40

Type: **not specified**

## **Search for resonant WZ production in the fully leptonic final state in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector**

*Thursday, 9 January 2020 16:51 (12 minutes)*

**Presenter:** LU, Miaoran (University of Science and Technology of China (CN))

**Session Classification:** young scientist session

Contribution ID: 41

Type: **not specified**

## **Searching for Neutral BSM Higgs Bosons in the Tau Tau Final State**

*Thursday, 9 January 2020 17:03 (12 minutes)*

**Presenter:** KRZYSIAK, Janina Anna (Polish Academy of Sciences (PL))

**Session Classification:** young scientist session

Contribution ID: 42

Type: **not specified**

## **Investigation of the CP properties of VBF Higgs production using the decay to a pair of tau leptons with the ATLAS detector**

*Thursday, 9 January 2020 17:15 (15 minutes)*

**Presenter:** OERDEK, Serhat

**Session Classification:** young scientist session

Contribution ID: 43

Type: **not specified**

## **Search for vector-like quarks decaying through a Z boson**

*Thursday, 9 January 2020 17:30 (12 minutes)*

**Presenter:** VALE, Tiago (LIP Laboratorio de Instrumentacao e Fisica Experimental de Part)

**Session Classification:** young scientist session

Contribution ID: 44

Type: **not specified**

## **Analysis of ttH production in multilepton final states with ATLAS detector**

*Thursday, 9 January 2020 17:42 (12 minutes)*

**Presenter:** Mr LI, Zhi (Shandong University (CN), CPPM, Aix-Marseille Université, CNRS/IN2P3 (FR))

**Session Classification:** young scientist session

Contribution ID: 45

Type: **not specified**

## **Dependence of the photon flux on the nucleus density**

*Thursday, 9 January 2020 12:06 (12 minutes)*

**Presenters:** KLUZ, Michał; RUDYK, Łukasz

**Session Classification:** young scientist session

Contribution ID: 46

Type: **not specified**

## **Ultra-peripheral Upsilon meson photoproduction in PbPb collisions in CMS detector**

*Thursday, 9 January 2020 12:42 (12 minutes)*

**Presenter:** WALCZAK, Marek Bohdan (University of Warsaw (PL))

**Session Classification:** young scientist session

Contribution ID: 47

Type: **not specified**

# High precision lepton pair bremsstrahlung with PHOTOS

*Thursday, 9 January 2020 12:30 (12 minutes)*

**Presenter:** ANTROPOV, Sergii

**Session Classification:** young scientist session



Contribution ID: 48

Type: **not specified**

## **Diphoton production in pp collision at NLO:Signal Analysis**

**Presenter:** HAMMOUD, Nadine

**Session Classification:** young scientist session

Contribution ID: 49

Type: **not specified**

## **Four-pion production in heavy-ion collision at LHC**

*Wednesday, 8 January 2020 16:40 (25 minutes)*

**Presenter:** KLUSEK-GAWENDA, Mariola (Institute of Nuclear Physics Polish Academy of Sciences)

**Session Classification:** Strong interactions @ LHC

Contribution ID: 50

Type: **not specified**

## **High Precision Phenomenology of the Higgs Boson**

**Presenter:** Dr CHEN, Xuan (Universitaet Zuerich (CH))

**Session Classification:** New Physics

Contribution ID: 51

Type: **not specified**

## Higgs decays into b-quarks...

*Tuesday, 7 January 2020 17:30 (30 minutes)*

**Presenter:** BIZON, Wojciech (University of Oxford (GB))

**Session Classification:** Higgs Physics

Contribution ID: 52

Type: **not specified**

## Evolution in Colour Space

*Wednesday, 8 January 2020 13:30 (30 minutes)*

**Presenters:** PLATZER, Simon (University of Vienna (AT)); PLÄTZER, Simon (DESY)

**Session Classification:** Monte Carlo

Contribution ID: 53

Type: **not specified**

## **The chirality flow method**

*Wednesday, 8 January 2020 14:00 (30 minutes)*

**Presenter:** SJODAHL, Malin (Lund University)

**Session Classification:** Monte Carlo

Contribution ID: 55

Type: **not specified**

## **Phase-space generation improvements for Belle II and LHC-b tau decay generation**

*Wednesday, 8 January 2020 15:00 (20 minutes)*

**Presenter:** ZAREMBA, Jakub

**Session Classification:** Monte Carlo

Contribution ID: 56

Type: **not specified**

## **Neutron decay anomaly: hint to BSM physics, a QM effect, or just a systematic error?**

*Friday, 10 January 2020 09:30 (30 minutes)*

**Presenter:** GIACOSA, Francesco (Kielce University)

**Session Classification:** Electroweak physics



Contribution ID: 57

Type: **not specified**

## **NNLO QCD calculations with the Sector-improved residue subtraction scheme**

*Friday, 10 January 2020 11:00 (30 minutes)*

**Presenter:** PONCELET, Rene (Cambridge University)

**Session Classification:** Loop Calculations

Contribution ID: 58

Type: **not specified**

## **NLO, top quark**

*Friday, 10 January 2020 11:30 (30 minutes)*

**Presenter:** BEVILAQUA, Giuseppe

**Session Classification:** Loop Calculations

Contribution ID: 59

Type: **not specified**

## NNLO

**Presenter:** CAOLA, Fabrizio (Johns Hopkins University)

**Session Classification:** Loop Calculations

Contribution ID: **60**

Type: **not specified**

## **Learning from the Lund plane**

*Friday, 10 January 2020 12:30 (30 minutes)*

**Presenter:** DREYER, Frederic Alexandre (Oxford)

**Session Classification:** Loop Calculations

Contribution ID: **61**

Type: **not specified**

## **Soft QCD at ATLAS and CMS**

*Tuesday, 7 January 2020 12:25 (30 minutes)*

**Presenter:** KULCHITSKY, Yuri

**Session Classification:** QCD

Contribution ID: 63

Type: **not specified**

## **Top precision for the associated top-pair production at the LHC**

*Tuesday, 7 January 2020 11:55 (30 minutes)*

**Presenters:** KULESZA, Anna Katarzyna (Westfaelische Wilhelms-Universitaet Muenster (DE)); KULESZA, Anna (University of Muenster)

**Session Classification:** QCD

Contribution ID: **64**

Type: **not specified**

## **Higgs phenomenology for new physics**

*Thursday, 9 January 2020 09:00 (30 minutes)*

**Presenters:** ENGLERT, Christoph (Heidelberg University); ENGLERT, Christoph Peter (University of Glasgow (GB))

**Session Classification:** New Physics

Contribution ID: 65

Type: **not specified**

## **Physics opportunities with a future soft particle tracker in LHCb**

**Presenter:** DA SILVA, Cesar Luiz (Los Alamos National Laboratory (US))

**Session Classification:** New Physics



Contribution ID: **66**

Type: **not specified**

## **Searches for a charged Higgs boson at CMS**

*Thursday, 9 January 2020 12:18 (12 minutes)*

**Presenter:** BHYUN, Ji Hwan (Seoul National University (KR))

**Session Classification:** young scientist session

Contribution ID: 67

Type: **not specified**

## Effects of in-medium $k_T$ broadening on di-jet observables

*Wednesday, 8 January 2020 17:30 (30 minutes)*

**Presenter:** ROHRMOSER, Martin (Jan Kochanowski University Kielce)

**Session Classification:** Strong interactions @ LHC

Contribution ID: **68**

Type: **not specified**

## **Precision electroweak measurements at CMS**

*Friday, 10 January 2020 10:00 (30 minutes)*

**Presenter:** CIULLI, Vitaliano (Universita e INFN, Firenze (IT))

**Session Classification:** Electroweak physics

Contribution ID: **69**

Type: **not specified**

# High Precision Phenomenology of the Higgs Boson

*Friday, 10 January 2020 12:00 (30 minutes)*

**Presenter:** CHEN, Xuan (Universitaet Zuerich (CH))

**Session Classification:** Loop Calculations

Contribution ID: 70

Type: **not specified**

## **Theoretical predictions for Higgs physics: status and prospects**

*Thursday, 9 January 2020 10:30 (30 minutes)*

**Presenter:** CAOLA, Fabrizio (Johns Hopkins University)

**Session Classification:** New Physics

Contribution ID: 71

Type: **not specified**

## **High-precision for high-energy tails**

**Presenter:** LINDERT, Jonas (University of Sussex)

**Session Classification:** Higgs Physics

Contribution ID: 72

Type: **not specified**

## **Vacuum energy with mass generation and Higgs bosons**

**Presenter:** BASS, Steven (Jagiellonian University (PL))

**Session Classification:** Electroweak physics

Contribution ID: 73

Type: **not specified**

## Welcome

*Tuesday, 7 January 2020 09:00 (20 minutes)*

**Presenter:** JEZABEK, Marek (Polish Academy of Sciences (PL))

**Session Classification:** Welcome and Introduction



Contribution ID: 74

Type: **not specified**

## **Introduction and Information**

*Tuesday, 7 January 2020 09:20 (10 minutes)*

**Session Classification:** Welcome and Introduction

Contribution ID: 75

Type: **not specified**

## **Relativistic hydrodynamics for spin-polarized media**

*Tuesday, 7 January 2020 12:55 (30 minutes)*

**Presenter:** RYBLEWSKI, Radoslaw (Institute of Nuclear Physics PAN)

**Session Classification:** QCD

Contribution ID: 76

Type: **not specified**

## **Searching for odderon in central exclusive processes at the LHC**

*Friday, 10 January 2020 15:30 (30 minutes)*

**Presenter:** LEBIEDOWICZ, Piotr (Institute of Nuclear Physics PAN)

**Session Classification:** Strong interactions @ LHC

Contribution ID: 77

Type: **not specified**

## High-precision for high-energy tails

*Tuesday, 7 January 2020 17:00 (30 minutes)*

**Presenter:** LINDERT, Jonas (University of Sussex)

**Session Classification:** Higgs Physics

Contribution ID: 78

Type: **not specified**

## **Higgs cross section measurements in the four lepton final state at CMS**

*Thursday, 9 January 2020 11:54 (12 minutes)*

**Presenter:** JAVAID, Tahir (Chinese Academy of Sciences (CN))

**Session Classification:** young scientist session

Contribution ID: 79

Type: **not specified**

## Fully Bayesian Unfolding

*Thursday, 9 January 2020 11:42 (12 minutes)*

**Presenter:** BARON, Petr (Palacky University (CZ))

**Session Classification:** young scientist session

Contribution ID: **80**

Type: **not specified**

## **Vacuum energy with mass generation and Higgs bosons**

*Tuesday, 7 January 2020 18:00 (30 minutes)*

**Presenter:** BASS, Steven (Jagiellonian University (PL))

**Session Classification:** Higgs Physics

Contribution ID: **81**

Type: **not specified**

## **Top Physics results from CMS and ATLAS**

*Tuesday, 7 January 2020 11:25 (30 minutes)*

**Presenter:** MITRA, Soureek (KIT - Karlsruhe Institute of Technology (DE))

**Session Classification:** QCD



Contribution ID: **83**

Type: **not specified**

## **Search for new particles in the process of $ZZ^* \rightarrow 4l$ at CMS**

*Thursday, 9 January 2020 17:54 (12 minutes)*

**Presenter:** GUO, Qianying (Beihang University (CN))

**Session Classification:** young scientist session

Contribution ID: **84**

Type: **not specified**

## **Nested soft-collinear subtractions in NNLO QCD computations**

*Thursday, 9 January 2020 11:30 (12 minutes)*

**Presenter:** ASTERIADIS, Konstantin (Karlsruhe Institute of Technology (KIT))

**Session Classification:** young scientist session

Contribution ID: **86**

Type: **not specified**

## **Transverse momentum dependent parton distributions**

*Wednesday, 8 January 2020 14:30 (30 minutes)*

**Presenter:** KUSINA, Aleksander (IFJ PAN)

**Session Classification:** Monte Carlo

Contribution ID: 87

Type: **not specified**

## **Spacetime Colour Reconnection in Herwig 7**

*Wednesday, 8 January 2020 18:00 (30 minutes)*

**Presenter:** MYSKA, Miroslav (Czech Technical University (CZ))

**Session Classification:** Strong interactions @ LHC