

**XXVII Cracow EPIPHANY  
Conference on Future of  
particle physics**

**Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Welcome from DG

*Thursday 7 January 2021 09:30 (20 minutes)*

**Presenter:** LESIAK, Tadeusz (Polish Academy of Sciences (PL))

**Session Classification:** Introductions

Contribution ID: 2

Type: **not specified**

## **Strategies and plans for particle physics in Europe**

*Thursday 7 January 2021 09:50 (45 minutes)*

**Presenter:** D'HONDT, Jorgen (Vrije Universiteit Brussel (BE))

**Session Classification:** Introductions

Contribution ID: 3

Type: **not specified**

## **The many opportunities and challenges of the FCC**

*Thursday 7 January 2021 11:05 (45 minutes)*

**Presenter:** BLONDEL, Alain (Universite de Geneve (CH))

**Session Classification:** Overview

Contribution ID: 4

Type: **not specified**

## Status of the CEPC project

*Thursday 7 January 2021 11:50 (45 minutes)*

**Presenter:** WANG, Jianchun (Chinese Academy of Sciences (CN))

**Session Classification:** Overview

Contribution ID: 5

Type: **not specified**

## **B-physics anomalies: lessons and open issues**

*Thursday 7 January 2021 15:45 (35 minutes)*

**Presenter:** ISIDORI, Gino (Universitaet Zuerich (CH))

**Session Classification:** Flavour

Contribution ID: 6

Type: **not specified**

# The Belle II Experiment: First Results, Status, and Prospects

*Thursday 7 January 2021 16:20 (35 minutes)*

**Presenter:** CUNLIFFE, Sam (DESY)

**Session Classification:** Flavour

Contribution ID: 7

Type: **not specified**

## **LHCb: Overview of Run2 results**

*Saturday 9 January 2021 15:45 (35 minutes)*

**Presenters:** NEEDHAM, Matthew David (The University of Edinburgh (GB)); NEEDHAM, Matthew David (The University of Edinburgh (GB))

**Session Classification:** Flavour



Contribution ID: 8

Type: **not specified**

## **Non-local matrix elements in $b \rightarrow s \ell \ell$**

*Saturday 9 January 2021 16:20 (25 minutes)*

**Presenter:** Dr GUBERNARI, Nico (Universität Siegen)

**Session Classification:** Flavour

Contribution ID: 9

Type: **not specified**

## **Run2 highlights from the ATLAS experiment**

*Thursday 7 January 2021 14:05 (35 minutes)*

**Presenter:** GUILLEMIN, Thibault (Centre National de la Recherche Scientifique (FR))

**Session Classification:** LHC

Contribution ID: **10**

Type: **not specified**

## Overview of CMS results

*Thursday 7 January 2021 14:40 (35 minutes)*

**Presenter:** CLERBAUX, Barbara (Universite Libre de Bruxelles (BE))

**Session Classification:** LHC

Contribution ID: 11

Type: **not specified**

## **Higgs measurements at the e+e- colliders.**

*Friday 8 January 2021 11:15 (35 minutes)*

**Presenter:** KLUTE, Markus (Massachusetts Inst. of Technology (US))

**Session Classification:** Higgs Physics

Contribution ID: 12

Type: **not specified**

## **Extended scalar sectors at future colliders**

*Friday 8 January 2021 11:50 (35 minutes)*

**Presenter:** ROBENS, Tania Natalie (Rudjer Boskovic Institute (HR))

**Session Classification:** Higgs Physics

Contribution ID: 13

Type: **not specified**

## The Search for Right-Handed Neutrinos

*Friday 8 January 2021 09:00 (35 minutes)*

**Presenter:** DREWES, Marco (Universite Catholique de Louvain (UCL) (BE))

**Session Classification:** Long Living Particles

Contribution ID: 14

Type: **not specified**

## Long-lived particles at future colliders

*Friday 8 January 2021 09:35 (35 minutes)*

**Presenter:** GONZALEZ SUAREZ, Rebeca (Uppsala University (SE))

**Session Classification:** Long Living Particles

Contribution ID: 15

Type: **not specified**

## The FASER Experiment

*Friday 8 January 2021 10:10 (35 minutes)*

**Presenter:** KAJOMOVITZ MUST, Enrique (Technion, Israel Institute of Technology)

**Session Classification:** Long Living Particles



Contribution ID: 16

Type: **not specified**

## **On the role of the precision Monte Carlo generators in future electron colliders**

*Friday 8 January 2021 15:05 (35 minutes)*

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

**Session Classification:** Electroweak physics

Contribution ID: 17

Type: **not specified**

## Theory needs for future e+e- colliders

*Friday 8 January 2021 15:40 (35 minutes)*

**Presenter:** FREITAS, Ayres (University of Pittsburgh)

**Session Classification:** Electroweak physics

Contribution ID: **18**

Type: **not specified**

## **A storage ring proton EDM experimental method with a hybrid and highly symmetric electric ring lattice**

*Friday 8 January 2021 14:30 (35 minutes)*

**Presenter:** Prof. SEMERTZIDIS, Yannis (IBS/CAPP and KAIST in Republic of Korea (South Korea))

**Session Classification:** Electroweak physics

Contribution ID: **19**

Type: **not specified**

## **EIC Project Overview**

*Saturday 9 January 2021 13:30 (35 minutes)*

**Presenter:** Prof. YECK, James

**Session Classification:** Hadronic and others

Contribution ID: 20

Type: **not specified**

## **Baryon number in proton-proton and proton-nucleus high energy collisions**

*Saturday 9 January 2021 14:05 (35 minutes)*

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

**Co-author:** RYBICKI, Andrzej (Polish Academy of Sciences (PL))

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

**Session Classification:** Hadronic and others

Contribution ID: 21

Type: **not specified**

## **M-theory and the birth of the Universe**

*Saturday 9 January 2021 14:40 (35 minutes)*

**Presenter:** KLINKHAMER, Frans (Karlsruhe Institute of Technology)

**Session Classification:** Hadronic and others

Contribution ID: 22

Type: **not specified**

## **FCC software for physics and detector studies**

*Sunday 10 January 2021 10:30 (35 minutes)*

**Presenter:** HELSENS, Clement (CERN)

**Session Classification:** Computing

Contribution ID: 23

Type: **not specified**

## **Key4HEP - Turnkey Software for Future Colliders**

*Sunday 10 January 2021 11:05 (35 minutes)*

**Presenter:** MADLENER, Thomas (Deutsches Elektronen-Synchrotron (DESY))

**Session Classification:** Computing



Contribution ID: 24

Type: **not specified**

## **Tetraquark production at LHC and FCC**

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

**Session Classification:** Flavour

Contribution ID: 25

Type: **not specified**

## **S channel Higgs production**

*Friday 8 January 2021 12:25 (35 minutes)*

**Presenter:** D'ENTERRIA, David (CERN)

**Session Classification:** Higgs Physics

Contribution ID: 26

Type: **not specified**

## **Detector simulation for a potential upgrade of the vertex detector of the Belle II experiment**

*Sunday 10 January 2021 12:40 (15 minutes)*

**Presenter:** FILINGER, Tristan

**Session Classification:** PhD student session

Contribution ID: 27

Type: **not specified**

## **Early charmless B decay results from Belle II**

*Sunday 10 January 2021 12:55 (15 minutes)*

**Presenter:** CHEN, Janice

**Session Classification:** PhD student session

Contribution ID: 28

Type: **not specified**

## **Early tau lifetime measurements with Belle II**

*Sunday 10 January 2021 13:10 (15 minutes)*

**Presenter:** MONETA, Stefano

**Session Classification:** PhD student session

Contribution ID: 29

Type: **not specified**

## Search for Axion-like Particles at Belle II

*Sunday 10 January 2021 13:25 (15 minutes)*

**Presenter:** DE NUCCIO, Michael (Deutsches Elektronen-Synchrotron DESY)

**Session Classification:** PhD student session

Contribution ID: **30**

Type: **not specified**

## **Mixing and CP violation in charm mesons at LHCb**

*Sunday 10 January 2021 13:40 (15 minutes)*

**Presenter:** SHIELDS, Edward (Universita & INFN, Milano-Bicocca (IT))

**Session Classification:** PhD student session

Contribution ID: 31

Type: **not specified**

## **Measurement of the associated production of a Higgs boson decaying into b-quarks with a vector boson at high transverse momentum with the ATLAS detector**

*Sunday 10 January 2021 13:55 (15 minutes)*

**Presenter:** FOTI, Maria Giovanna (University of Oxford (GB))

**Session Classification:** PhD student session



Contribution ID: 32

Type: **not specified**

## **Measurement of the Higgs Simplified Template Cross Sections using $H \rightarrow \gamma\gamma$ decays with the ATLAS experiment**

*Sunday 10 January 2021 16:25 (15 minutes)*

**Presenter:** FRANCO, Luca (Centre National de la Recherche Scientifique (FR))

**Session Classification:** PhD student session

Contribution ID: 33

Type: **not specified**

## Searches for $\tilde{\chi}'$ and $\tilde{\chi}$ in leptonic final states using 139 $\sqrt{s}=13$ TeV collision data collected at $\sqrt{s} = 13$ TeV with the ATLAS detector

*Sunday 10 January 2021 16:10 (15 minutes)*

**Presenter:** O'KEEFE, Michael William (University of Liverpool (GB))

**Session Classification:** PhD student session

Contribution ID: 34

Type: **not specified**

## **Exclusive dilepton production in ultraperipheral lead-lead collisions in the ATLAS experiment**

*Sunday 10 January 2021 17:25 (15 minutes)*

**Presenter:** OGRODNIK, Agnieszka Ewa (AGH University of Science and Technology (PL))

**Session Classification:** PhD student session

Contribution ID: 35

Type: **not specified**

## **Evolution of spin polarization in the Gubser flow background**

*Sunday 10 January 2021 14:40 (15 minutes)*

**Presenter:** Mr SINGH, Rajeev (Institute of Nuclear Physics Polish Academy of Sciences)

**Session Classification:** PhD student session

Contribution ID: 36

Type: **not specified**

## **Terrestrial keV Sterile Neutrino Dark Matter Searches: Alive and Kicking**

*Sunday 10 January 2021 15:10 (15 minutes)*

**Presenter:** Ms BENSO, Cristina (Max Planck Institute for Nuclear Physics in Heidelberg)

**Session Classification:** PhD student session

Contribution ID: 37

Type: **not specified**

## **Comparison of Machine Learning Approach to other Commonly Used Unfolding Methods**

*Sunday 10 January 2021 14:25 (15 minutes)*

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

**Session Classification:** PhD student session

Contribution ID: **38**

Type: **not specified**

## **Sector Decomposition Scheme for $N^3\text{LO}$ Beam Function.**

*Sunday 10 January 2021 16:40 (15 minutes)*

**Presenter:** GODA, Tomoki (IFJ PAN)

**Session Classification:** PhD student session

Contribution ID: 39

Type: **not specified**

## **Analytic representation of all planar two-loop five-point Master Integrals with one off-shell leg**

*Sunday 10 January 2021 16:55 (15 minutes)*

**Presenter:** SYRRAKOS, Nikolaos (NCSR DEMOKRITOS)

**Session Classification:** PhD student session



Contribution ID: 40

Type: **not specified**

## **A method for the measurement of $J/\psi$ cross section in hadronic matter using femtoscopy.**

*Sunday 10 January 2021 14:55 (15 minutes)*

**Presenter:** BAHMANI, Marzieh (Polish Academy of Sciences (PL))

**Session Classification:** PhD student session

Contribution ID: 41

Type: **not specified**

## **Angular observables in the $B^0 \rightarrow K^{*0} \mu^+ \mu^-$ decay at LHCb.**

*Sunday 10 January 2021 15:25 (15 minutes)*

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

**Session Classification:** PhD student session

Contribution ID: 42

Type: **not specified**

## **Spectroscopy in beauty decays at the LHCb experiment**

*Sunday 10 January 2021 15:40 (15 minutes)*

**Presenter:** OVSIANNIKOVA, Tatiana (NRC "Kurchatov Institute" (ITEP) (RU))

**Session Classification:** PhD student session

Contribution ID: 43

Type: **not specified**

## Polish FCC day

*Saturday 9 January 2021 09:00 (3 hours)*

The agenda is available:

<https://indico.cern.ch/event/987694/>

**Session Classification:** Polish FCC day (the agenda available at: <https://indico.cern.ch/event/987694/>)

Contribution ID: 44

Type: **not specified**

## **Simplified Differential Equations for Master Integrals @ N3LO**

*Sunday 10 January 2021 17:10 (15 minutes)*

**Presenter:** CANKO, Dhimiter (NSCR "Demokritos")

**Session Classification:** PhD student session

Contribution ID: 45

Type: **not specified**

## ttbar at FCC

*Sunday 10 January 2021 09:35 (25 minutes)*

**Presenter:** ANDREA, Jeremy (Centre National de la Recherche Scientifique (FR))

**Session Classification:** ttbar production

Contribution ID: 46

Type: **not specified**

## **Tetraquark production at LHC and FCC**

*Sunday 10 January 2021 09:00 (35 minutes)*

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

**Session Classification:**  $t\bar{t}$  production