

Curriculum Vitae

Academic career

- Since 2023 **Assistant Professor with tenure 'Adjunkt', IFJ PAN, Kraków**
Research Interests: higher-order QCD computations for multi-scale processes, jet physics, fixed-order fragmentation, multi-loop computations, subtraction methods
- 2021–2023 **Leverhulme Early Career Fellow, Cavendish Laboratory, Cambridge**
Research Interests: higher-order QCD computations for multi-scale processes, jet physics, fixed-order fragmentation, multi-loop computations, subtraction methods
Main Results: three-jet production and event shapes at NNLO QCD, W+2j production through NNLO QCD, flavour-safe anti-kT jet algorithm
- 2018–2021 **Research Associate (PostDoc), Cavendish Laboratory, Cambridge**
Research Interests: higher-order QCD computations, top-quark physics, quark and vector boson polarisation effects, multi-loop computations, subtraction methods
Main Results: top quark pair production including decays, inclusive jets, three-photon production, polarised vector-boson production at NNLO
- 2015–2018 **PhD, RWTH Aachen University, Aachen**
Thesis: Precision Top-Quark Physics with Leptonic Final States,
Referees: Prof. Dr. Michal Czakon and Prof. Dr. Robert Harlander.
Member of DFG GK "Teilchen- und Astroteilchenphysik im Lichte von LHC".
- 2013–2015 **Master of Science Physics, Georg-August University, Göttingen**
Thesis: Monte Carlo event generation with the (MC)³ sampling algorithm,
Referee: Prof. Dr. Steffen Schumann.
- 2010–2013 **Bachelor of Science Physics, Georg-August University, Göttingen**
Thesis: Systematic studies on the production of bottom-quarks in parton shower simulations, Referee: Prof. Dr. Steffen Schumann.

Awards

- 2021 **Leverhulme Early Career Fellowship**
Project: The 'NNLO revolution': pushing the boundary of perturbative QCD.
Awarded by the Leverhulme Trust and the Isaac Newton Trust.
- 2019 **Cavendish Laboratory staff reward**

Relevant academic activities

- 2023/11 Local organising committee "2PiNTS" workshop, IFJ PAN Kraków
- 2023/9 QCD@LHC23, convener of "Processes with heavy quarks" session.
- 2023/6 PhysTev 23, workshop in Les Houches.
- 2023/3 DIS2023, convener of WG4 "QCD and heavy flavor".
- Since 2023 Referee for SciPost.
- 2022/8 MIAPbP workshop: Gearing up for high-precision LHC physics.
- 2022/6 DiRAC workshop: Accelerated Computing with Cuda.
- Since 2021 College Research Associate, Emmanuel College, Cambridge.
- Since 2021 Referee for EPJC and JHEP.

2021/2	DiRAC workshop: DiRAC AI-athon.
2020–2023	Organizer of the DAMPT-Cavendish Joint Seminar Series.
2016/7	CTEQ - MCnet School at DESY.
2015/4	Helmholtz Alliance Monte-Carlo School at DESY.
2013/7	Summer student at DESY, supervisor: Simon Plätzer.
2013/2	Helmholtz Alliance Introduction to the Terascale at DESY.

Teaching & Mentoring

Maria Laach Herbstschule, theory coordinator

Teaching at Cambridge University:

- 2023: Supervision of Louis Christou in summer-student programme.
- 2021-2023: Undergraduate supervisions at Emmanuel College.
- 2019-2022: Graduate Lecture “HEP computing tools” at the Cavendish Laboratory.
- 2019-2022: PhD project co-supervision of Andrei Popescu.
- 2019 : Part III project co-supervision of Weijun Li.

Tutoring of various undergraduate courses at the University of Göttingen (2012-2015) and RWTH Aachen University (2016-2018)

- Mechanics ■ Quantummechanics ■ Relativistic Quantummechanics ■ Electrodynamics
- Mathematics for Physicists.

Public Engagement

2023	Isaac Newton Trust Fellows’ Event , <i>Cambridge University</i> , Cambridge, Public talk to general public: ”Exploring Quantum Effects at the Terascale”
2021	Engaged Researcher Online , <i>Cambridge University</i> , Cambridge, Introduction To Public Engagement, course at the University of Cambridge
2018	Science Fair , <i>Wirsberg Gymnasium</i> , Würzburg, Scientific contact for students for feedback and advice on project design and result analysis

Talks and Seminars

Plenary	■ 2023/6 SM@LHC 2023 at Fermilab (remote) ■ 2022/9 TOP 2022 in Durham ■ 2022/8 MBI 2022 in Shanghai (virtual) ■ 2022/4 SM@LHC 2022 at CERN ■ 2022/3 Moriond 2022 in La Thuile ■ 2021/5 RADCOR+LoopFest 2021 in Tallahassee (virtual) ■ 2020/9 Top 2020 in Durham (virtual) ■ 2020/1 Epiphany Conference 2020 in Kraków ■ 2018/9 Top 2018 in Bad Neuenahr ■ 2018/7 LoopFest 2018 at Michigan State University
Talks	■ 2023/03 2PiNTS workshop in Kraków, Poland ■ 2023/03 RADCOR 23 in Crieff, Scotland ■ 2023/03 DIS 23 at Michigan State University ■ 2022/12 CMS Top working group ■ 2022/11 QCD@LHC 2022 in Orsay ■ 2022/9 HP2 2022 in Newcastle ■ 2022/5 LHCP 2022 virtual ■ 2022/2 CMS Hadronic Workshop at CERN ■ 2022/2 EW Working Group General Meeting at CERN ■ 2021/11 EW Working Group at CERN ■ 2021/5 Jets and their substructure from LHC data 2019 at CERN ■ 2019/9 RADCOR 2019 in Avignon ■ 2019/5 LHCP 2019 in Puebla ■ 2019/4 DIS 2019 in Turino ■ 2017/9 RADCOR 2017 in St. Gilgen ■ 2017/8 QCD@LHC 2017 in Debrecen
Seminars	■ 2023/11 DESY Zeuthen ■ 2023/10 CERN QCD lunch ■ 2023/10 IFJ Krakow ■ 2023/9 Milan Biccoca ■ 2022/5 ATLAS PDF Forum ■ 2023/4 RWTH Aachen Colloquium ■ 2023/2 INFN Turin ■ 2023/1 Würzburg ■ 2022/9 Zürich (UZH) ■ 2022/7 CERN Collider Cross Talk ■ 2022/7 MPI Munich ■ 2022/5 ATLAS PDF Forum ■ 2022/4 Freiburg ■ 2022/2 Cambridge ■ 2021/10 University of Sussex ■ 2021/6 CERN ■ 2020/2 Milan ■ 2020/2 Oxford ■ 2019/7 Dortmund ■ 2019/5 DAMTP-Cavendish ■ 2018/2 Zürich (ETH) ■ 2017/11 Freiburg ■ 2017/11 Würzburg

List of publications

ORCID iD: 0000-0003-4889-9396

Total number peer-reviewed articles: 20

Total number of citations: 762

Database used: Inspire HEP

<https://inspirehep.net/authors/1812055?ui-citation-summary=true>

Date: 11 Dec 2023

Journal Articles

- **Isolated photon production in association with a jet pair through next-to-next-to-leading order in QCD**, S. Badger, M. Czakon, B. Hartanto, R. Moodie, T. Peraro, **R. Poncelet**, S. Zoia, JHEP 10 (2023) 071
- **NNLO QCD corrections to event shapes at the LHC**, M. Alvarez, J. Cantero, M. Czakon, J. Llorente, A. Mitov, **R. Poncelet**, JHEP 03 (2023) 129
- **A detailed investigation of W+c-jet at the LHC**, M. Czakon, A. Mitov, M. Pellen, **R. Poncelet**, JHEP 02 (2023) 241
- **NNLO B-fragmentation fits and their application to $t\bar{t}$ production and decay at the LHC**, M. Czakon, T. Generet, A. Mitov, **R. Poncelet**, JHEP03 (2023) 251
- **NNLO QCD corrections to $Wb\bar{b}$ production at the LHC**, H. Bayu Hartanto, **R. Poncelet**, A. Popescu, S. Zoia, Phys.Rev.D 106 (2022) 7, 074016
- **Infrared-safe flavoured anti- k_T jets**, M. Czakon, A. Mitov, **R. Poncelet**, JHEP 04 (2023), 138
- **Angular coefficients in W+j production at the LHC with high precision**, M. Pellen, **R. Poncelet**, A. Popescu, T. Vitos, Eur.Phys.J.C 82 (2022) 8, 693
- **Polarised W+j production at the LHC: a study at NNLO QCD accuracy**, M. Pellen, **R. Poncelet**, A. Popescu, JHEP 02 (2022) 160
- **Next-to-Next-to-Leading Order Study of Three-Jet Production at the LHC**, M. Czakon, A. Mitov, **R. Poncelet**, Phys.Rev.Lett. 127 (2021) 15, 152001
- **NNLO QCD corrections to diphoton production with an additional jet at the LHC**, H. Chawdhry, M. Czakon, A. Mitov, **R. Poncelet**, JHEP 09 (2021) 093
- **Two-loop leading-colour QCD helicity amplitudes for two-photon plus jet production at the LHC**, H. Chawdhry, M. Czakon, A. Mitov, **R. Poncelet**, JHEP 07 (2021) 164
- **NNLO QCD study of polarised W^+W^- production at the LHC**, **R. Poncelet**, A. Popescu, JHEP 07 (2021) 023
- **B-hadron hadro-production in NNLO QCD: application to LHC $t\bar{t}$ events with leptonic decays**, M. Czakon, T. Generet, A. Mitov, **R. Poncelet**, JHEP 10 (2021) 216
- **Two-loop leading-color helicity amplitudes for three-photon production at the LHC**, H. Chawdhry, M. Czakon, A. Mitov, **R. Poncelet**, JHEP 06 (2021) 150
- **NNLO QCD predictions for W+c-jet production at the LHC**, M. Czakon, A. Mitov, M. Pellen, **R. Poncelet**, JHEP 06 (2021) 100
- **NNLO QCD corrections to leptonic observables in top-quark pair production and decay**,

M. Czakon, A. Mitov, **R. Poncelet**, JHEP 05 (2021) 212

- **NNLO QCD corrections to three-photon production at the LHC**,
H. Chawdhry, M. Czakon, A. Mitov, **R. Poncelet**, JHEP 02 (2020) 057
- **Single-jet inclusive rates with exact color at $\mathcal{O}(\alpha_s^4)$** ,
M. Czakon, A. van Hameren, A. Mitov, **R. Poncelet**, JHEP 10 (2019) 262
- **Higher order corrections to spin correlations in top quark pair production at the LHC**,
A. Behring, M. Czakon, A. Mitov, A. Papanastasiou, **R. Poncelet**,
Phys. Rev. Lett. 123 (2019) no.8, 082001
- **Polarized double-virtual amplitudes for heavy-quark pair production**,
L. Chen, M. Czakon, **R. Poncelet**, JHEP 03 (2018) 085

Published on arXiv

- **Measurement of the production cross section for a W boson in association with a charm quark in proton-proton collisions at $\sqrt{s} = 13$ TeV**,
CMS Collaboration et al., 2308.02285 [hep-ex]
- **HighTEA: High energy Theory Event Analyser**,
M. Czakon, Z. Kassabov, A. Mitov, **R. Poncelet**, A. Popescu, 2304.05993 [hep-ph]
- **Flavour anti- k_T algorithm applied to $Wb\bar{b}$ production at the LHC**,
B. Hartanto, **R. Poncelet**, A. Popescu, S. Zoia, e-Print: 2209.03280 [hep-ph]

Proceedings and community efforts

- **Precision comparisons between theory and data in $t\bar{t}$ -production at the LHC**,
R. Poncelet, e-Print: 2212.06019 [hep-ph]
- **Report of the Topical Group on Top quark physics and heavy flavor production for Snowmass 2021**, K. Agashe et al. ,e-Print: 2209.11267 [hep-ph]
- **Snowmass White Paper: prospects for the measurement of top-quark couplings**
G. Durieux, A. Gutiérrez Camacho, L. Mantani, V. Miralles, M. Miralles López, M. Llácer Moreno, **R. Poncelet**, E. Vryonidou, M. Vos, e-Print: 2205.02140 [hep-ph]
- **NNLO QCD study of polarised W^+W^- production at the LHC**,
A. Popescu, **R. Poncelet**, PoS LHCP2021 (2021), 211
- **W+c-jet production at the LHC with NNLO QCD accuracy**,
M. Czakon, A. Mitov, M. Pellen, **R. Poncelet**,e-Print: 2110.05104 [hep-ph]
- **NNLO QCD Calculations with the Sector-improved Residue Subtraction Scheme**,
R. Poncelet, Acta Phys. Polon. B 51 (2020), 1503
- **Sector-improved residue subtraction: Improvements and Applications**,
A. Behring, M. Czakon, **R. Poncelet**, PoS LL2018 (2018), 024

Thesis

- **Precision Top-Quark physics with leptonic final states**,
R. Poncelet, RWTH Aachen publications (2018)