Mathieu Pellen

Universität Freiburg, Physikalisches Institut
Hermann-Herder-Straße 3, D-79104 Freiburg
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Date and place of birth:	4^{th} of June 1987 in Brest, France
Nationality, Gender, Status:	French, Male, Married with two children (Born in 2021 and 2024)
Languages:	French (native), English (fluent), German (fluent)

Research Positions

10/20 - present — Assistant Professor (Ak. Rat., since 04/24) - Senior Postdoctoral researcher (until 03/24)
Physics Institute, University of Freiburg (Germany)

10/18 - 09/20 — Research associate
Cavendish laboratory, University of Cambridge (United Kingdom)

10/15 - 09/18 — Postdoctoral researcher
Institute for Theoretical Physics und Astrophysics, University of Würzburg (Germany)

10/11 - 09/15 — PhD student
Precision Calculations for Physics Beyond the Standard Model,
Supervisor: Michael Krämer - RWTH Aachen (Germany)

03 - 08/11 — Master student
Energy and momentum conservation rules for the intersection of branes
Supervisor: David Wands - ICG, University of Portsmouth (United Kingdom)

06 - 08/10 — Bachelor student
Modelling proton-proton collisions at the LHC
Supervisor: Arthur Moraes - University of Glasgow (United Kingdom)

Education

11/2025 — Habilitation in Physics
Physics Institute, University of Freiburg (Germany)

02/2024 — Teaching qualification (France):
Professeur des universités (Professor) and *Maître de conférences* (Lecturer)

10/11 - 06/15 — PhD in natural science
Institute for Theoretical Particle Physics and Cosmology,
RWTH Aachen University (Germany)

09/10 - 09/11 — International Master in Subatomic and Astroparticle Physics
Joseph Fourier University / LPSC (CNRS), Grenoble (France)

09/08 - 09/11 — Master in Physics and Nanoscience
Grenoble Institute of Technology (France)

Parental leave: Four months - 03.2022, 11.2022, 04.2024, 04.2025.

Publications

43 journal articles, 25 proceedings or community reports, >2800 citations, h-index: 29. [Link to electronic list.]

Articles:

[1] G. Barone *et. al.*, *Higgs production via vector-boson fusion at the LHC*, *SciPost Phys.Comm.Rep.* **013** (2025) [2507.22574].

[2] H. A. Chawdhry, M. Pellen and S. Williams, *Quantum simulation of scattering amplitudes and interferences in perturbative QCD*, 2507.07194.

[3] S. Dittmaier, T. Engel, J. L. H. Ariza and M. Pellen, *Electroweak corrections to $\tau^+\tau^-$ production in ultraperipheral heavy-ion collisions at the LHC*, *JHEP* **08** (2025) 051 [2504.11391].

[4] A. Huss, J. Huston, S. Jones, M. Pellen and R. Röntsch, *Les Houches 2023 – Physics at TeV Colliders: Report on the Standard Model Precision Wishlist*, 2504.06689.

[5] I. Williams and M. Pellen, *A general approach to quantum integration of cross sections in high-energy physics*, *Quantum Sci. Technol.* **10** (2025), no. 4 045017 [2502.14647].

[6] J. M. Cruz-Martinez, G. De Laurentis and M. Pellen, *Accelerating Berends–Giele recursion for gluons in arbitrary dimensions over finite fields*, *Eur. Phys. J. C* **85** (2025), no. 5 590 [2502.07060].

[7] A. Denner, M. Pellen, M. Schönherr and S. Schumann, *Tri-boson and WH production in the W^+W^+jj channel: predictions at full NLO accuracy and beyond*, *JHEP* **08** (2024) 043 [2406.11516].

[8] CMS collaboration , A. Tumasyan *et. al.*, *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*, *Eur. Phys. J. C* **84** (2024), no. 1 27 [2308.02285].

[9] M. Grossi, M. Incudini, M. Pellen and G. Pelliccioli, *Amplitude-assisted tagging of longitudinally polarised bosons using wide neural networks*, *Eur. Phys. J. C* **83** (2023), no. 8 759 [2306.07726].

[10] H. A. Chawdhry and M. Pellen, *Quantum simulation of colour in perturbative quantum chromodynamics*, *SciPost Phys.* **15** (2023) 205 [2303.04818].

[11] A. Denner, M. Pellen and G. Pelliccioli, *NLO QCD corrections to off-shell top–antitop production with semi-leptonic decays at lepton colliders*, *Eur. Phys. J. C* **83** (2023), no. 5 353 [2302.04188].

[12] M. Czakon, A. Mitov, M. Pellen and R. Poncelet, *A detailed investigation of W+c-jet at the LHC*, *JHEP* **02** (2023) 241 [2212.00467].

[13] A. Huss, J. Huston, S. Jones and M. Pellen, *Les Houches 2021—physics at TeV colliders: report on the standard model precision wishlist*, *J. Phys. G* **50** (2023), no. 4 043001 [2207.02122].

[14] M. Pellen, R. Poncelet, A. Popescu and T. Vitos, *Angular coefficients in $W + j$ production at the LHC with high precision*, *Eur. Phys. J. C* **82** (2022), no. 8 693 [2204.12394].

[15] G. Agliardi, M. Grossi, M. Pellen and E. Prati, *Quantum integration of elementary particle processes*, *Phys. Lett. B* **832** (2022) 137228 [2201.01547].

[16] M. Pellen, R. Poncelet and A. Popescu, *Polarised W+j production at the LHC: a study at NNLO QCD accuracy*, *JHEP* **02** (2022) 160 [2109.14336].

[17] A. Denner, R. Franken, M. Pellen and T. Schmidt, *Full NLO predictions for vector-boson scattering into Z bosons and its irreducible background at the LHC*, *JHEP* **10** (2021) 228 [2107.10688].

[18] R. Covarelli, M. Pellen and M. Zaro, *Vector-Boson scattering at the LHC: Unraveling the electroweak sector*, *Int. J. Mod. Phys. A* **36** (2021), no. 16 2130009 [2102.10991].

[19] M. Czakon, A. Mitov, M. Pellen and R. Poncelet, *NNLO QCD predictions for W+c-jet production at the LHC*, *JHEP* **06** (2021) 100 [2011.01011].

[20] A. Denner, R. Franken, M. Pellen and T. Schmidt, *NLO QCD and EW corrections to vector-boson scattering into ZZ at the LHC*, *JHEP* **11** (2020) 110 [2009.00411].

[21] A. Denner, J.-N. Lang and M. Pellen, *Full NLO QCD corrections to off-shell ttbb production*, *Phys. Rev. D* **104** (2021), no. 5 056018 [2008.00918].

[22] F. A. Dreyer, A. Karlberg, J.-N. Lang and M. Pellen, *Precise predictions for double-Higgs production via vector-boson fusion*, *Eur. Phys. J.* **C80** (2020), no. 11 1037 [2005.13341].

[23] S. Bräuer, A. Denner, M. Pellen, M. Schönherr and S. Schumann, *Fixed-order and merged parton-shower predictions for WW and WWj production at the LHC including NLO QCD and EW corrections*, *JHEP* **10** (2020) 159 [2005.12128].

[24] M. Pellen, *Exploring the scattering of vector bosons at LHCb*, *Phys. Rev.* **D101** (2020), no. 1 013002 [1908.06805].

[25] A. Denner, S. Dittmaier, M. Pellen and C. Schwan, *Low-virtuality photon transitions $\gamma^* \to f\bar{f}$ and the photon-to-jet conversion function*, *Phys. Lett. B* **798** (2019) 134951 [1907.02366].

[26] M. Chiesa, A. Denner, J.-N. Lang and M. Pellen, *An event generator for same-sign W-boson scattering at the LHC including electroweak corrections*, *Eur. Phys. J.* **C79** (2019), no. 9 788 [1906.01863].

[27] A. Denner, S. Dittmaier, P. Maierhöfer, M. Pellen and C. Schwan, *QCD and electroweak corrections to WZ scattering at the LHC*, *JHEP* **06** (2019) 067 [1904.00882].

[28] L. Di Menza, J.-P. Nicolas and M. Pellen, *A new type of charged black hole bomb*, *Gen. Rel. Grav.* **52** (2020), no. 1 8 [1903.02941].

[29] A. Ballestrero *et. al.*, *Precise predictions for same-sign W-boson scattering at the LHC*, *Eur. Phys. J.* **C78** (2018), no. 8 671 [1803.07943].

[30] A. Denner and M. Pellen, *Off-shell production of top-antitop pairs in the lepton+jets channel at NLO QCD*, *JHEP* **02** (2018) 013 [1711.10359].

[31] B. Biedermann, A. Denner and M. Pellen, *Complete NLO corrections to W^+W^+ scattering and its irreducible background at the LHC*, *JHEP* **10** (2017) 124 [1708.00268].

[32] B. Biedermann, S. Bräuer, A. Denner, M. Pellen, S. Schumann and J. M. Thompson, *Automation of NLO QCD and EW corrections with Sherpa and Recola*, *Eur. Phys. J.* **C77** (2017) 492 [1704.05783].

[33] A. Denner, J.-N. Lang, M. Pellen and S. Uccirati, *Higgs production in association with off-shell top-antitop pairs at NLO EW and QCD at the LHC*, *JHEP* **02** (2017) 053 [1612.07138].

[34] L. Ali Cavasonza, H. Gast, M. Krämer, M. Pellen and S. Schael, *Constraints on leptophilic dark matter from the AMS-02 experiment*, *Astrophys. J.* **839** (2017), no. 1 36 [1612.06634].

[35] B. Biedermann, A. Denner and M. Pellen, *Large electroweak corrections to vector-boson scattering at the Large Hadron Collider*, *Phys. Rev. Lett.* **118** (2017), no. 26 261801 [1611.02951].

[36] A. Denner and M. Pellen, *NLO electroweak corrections to off-shell top-antitop production with leptonic decays at the LHC*, *JHEP* **08** (2016) 155 [1607.05571].

[37] C. Arina, M. Backović, E. Conte, B. Fuks, J. Guo, J. Heisig, B. Hespel, M. Krämer, F. Maltoni, A. Martini, K. Mawatari, M. Pellen and E. Vryonidou, *A comprehensive approach to dark matter studies: exploration of simplified top-philic models*, *JHEP* **11** (2016) 111 [1605.09242].

[38] J. Heisig, M. Krämer, M. Pellen and C. Wiebusch, *Constraints on Majorana Dark Matter from the LHC and IceCube*, *Phys. Rev.* **D93** (2016), no. 5 055029 [1509.07867].

[39] M. Backović, M. Krämer, F. Maltoni, A. Martini, K. Mawatari and M. Pellen, *Higher-order QCD predictions for dark matter production at the LHC in simplified models with s-channel mediators*, *Eur. Phys. J.* **C75** (2015), no. 10 482 [1508.05327].

[40] L. Ali Cavasonza, M. Krämer and M. Pellen, *Electroweak fragmentation functions for dark matter annihilation*, *JCAP* **1502** (2015), no. 02 021 [1409.8226].

[41] R. Gavin, C. Hangst, M. Krämer, M. Mühlleitner, M. Pellen, E. Popenda and M. Spira, *Squark Production and Decay matched with Parton Showers at NLO*, *Eur. Phys. J.* **C75** (2015), no. 1 29 [1407.7971].

[42] M. Pellen, *Conservation laws for colliding branes with induced gravity*, *Astrophys. Space Sci.* **357** (2015), no. 1 24 [1309.6750].

[43] R. Gavin, C. Hangst, M. Krämer, M. Mühlleitner, M. Pellen, E. Popenda and M. Spira, *Matching Squark Pair Production at NLO with Parton Showers*, *JHEP* **10** (2013) 187 [1305.4061].

Proceedings and Reports:

[1] H. A. Chawdhry and M. Pellen, *Quantum algorithms for the simulation of QCD processes in the perturbative regime*, [arXiv:2412.21177 [hep-ph]].

[2] M. Pellen, *Theoretical advances in electroweak, Higgs, and top physics at the LHC*, [arXiv:2407.09246 [hep-ph]].

[3] J. Andersen, B. Assi, K. Asteriadis, P. Azzurri, G. Barone, A. Behring, A. Benecke, S. Bhattacharya, E. Bothmann and S. Caletti, *et al. Les Houches 2023: Physics at TeV Colliders: Standard Model Working Group Report*, [arXiv:2406.00708 [hep-ph]].

[4] A. Karlberg, *et al. Ad interim recommendations for the Higgs boson production cross sections at* $\sqrt{s} = 13.6$ *TeV*, [arXiv:2402.09955 [hep-ph]].

[5] H. A. Chawdhry and M. Pellen, *Quantum algorithms for the simulation of perturbative QCD processes*, PoS **RADCOR2023** (2023), 087 [arXiv:2309.06182 [hep-ph]].

[6] F. Maltoni, *et al. TF07 Snowmass Report: Theory of Collider Phenomena*, [arXiv:2210.02591 [hep-ph]].

[7] J. M. Campbell, *et al. Event generators for high-energy physics experiments*, SciPost Phys. **16** (2024) no.5, 130 doi:10.21468/SciPostPhys.16.5.130 [arXiv:2203.11110 [hep-ph]].

[8] M. Czakon, A. Mitov, M. Pellen and R. Poncelet, *W+c-jet production at the LHC with NNLO QCD accuracy*, SciPost Phys. Proc. **7** (2022), 035 [arXiv:2110.05104 [hep-ph]].

[9] D. Buarque, *et al. Vector Boson Scattering Processes: Status and Prospects*, [arXiv:2106.01393 [hep-ph]].

[10] M. Pellen, *Vector bosons and jets at the LHC*, PoS **LHCP2020** (2021), 141 [arXiv:2009.12236 [hep-ph]].

[11] J. Baglio *et al.*, *VBSCan Mid-Term Scientific Meeting*, [arXiv:2004.00726 [hep-ph]].

[12] S. Amoroso *et al.*, *Les Houches 2019: Physics at TeV Colliders: Standard Model Working Group Report*, [arXiv:2003.01700 [hep-ph]].

[13] A. Denner, J.-N. Lang, M. Pellen and S. Uccirati, *NLO QCD + electroweak predictions for off-shell ttH production at the LHC*, [arXiv:1912.08493 [hep-ph]].

[14] R. Bellan *et al.*, *VBSCan Thessaloniki 2018 Workshop Summary*, [arXiv:1906.11332 [hep-ph]].

[15] P. Azzi *et al.*, *Standard Model Physics at the HL-LHC and HE-LHC*, [arXiv:1902.04070 [hep-ph]].

[16] J. R. Andersen *et al.*, *Les Houches 2017: Physics at TeV Colliders Standard Model Working Group Report*, [arXiv:1803.07977 [hep-ph]].

[17] C. F. Anders *et al.*, *Vector boson scattering: Recent experimental and theory developments*, Rev. Phys. **3**, 44 (2018) [arXiv:1801.04203 [hep-ph]].

[18] A. Denner, J.-N. Lang, M. Pellen and S. Uccirati, *NLO QCD and EW corrections to processes involving off-shell top quarks*, PoS RADCOR **2017**, 060 (2017) [arXiv:1711.08910 [hep-ph]].

[19] B. Biedermann, A. Denner and M. Pellen, *Electroweak corrections to vector-boson scattering*, PoS RADCOR **2017**, 072 (2017) [arXiv:1711.02932 [hep-ph]].

[20] M. Pellen, *Automated computations of electroweak corrections using Sherpa+Recola*, 29th Rencontres de Blois on Particle Physics and Cosmology Blois, France, May 28-June 2, 2017 [arXiv:1709.05791 [hep-ph]].

[21] B. Biedermann, A. Denner and M. Pellen, *NLO electroweak corrections to vector-boson scattering at the LHC*, PoS DIS **2017**, 164 (2018) [arXiv:1708.00646 [hep-ph]].

[22] L. Ali Cavasonza, M. Krämer and M. Pellen, *Exploring dark matter with AMS-02 through Electroweak Corrections*, 11th Patras Workshop on Axions, WIMPs and WISPs (Axion-WIMP 2015): Zaragoza, Spain, June 22-26, 2015

[23] J. Heisig and M. Pellen, *dark matter at the LHC and IceCube - a Simplified Model Interpretation*, Proceedings, 11th Patras Workshop on Axions, WIMPs and WISPs: Zaragoza, Spain, June 22-26, 2015 [arXiv:1509.08640 [hep-ph]].

[24] R. Gavin, C. Hangst, M. Krämer, M. Mühlleitner, M. Pellen, E. Popenda and M. Spira, *Squark Production and Decay at NLO matched with Parton Showers*, PoS DIS **2014**, 125 (2014).

[25] L. Ali Cavasonza, M. Krämer and M. Pellen, *Electroweak fragmentation functions for dark matter annihilation*, 10th Patras Workshop on Axions, WIMPs and WISPs: Geneva, Switzerland, June 29-July 4, 2014

Teaching

2026 **Lecturer** *Introduction to Mathematica* - University of Freiburg, Germany
→ Covering both lecture and exercise classes

2024-25 **Senior assistant/Lecturer** *Mathematics II* (in German) - University of Freiburg, Germany
→ Tutorials organiser, designing of exercise sheets and exams, replacements in four lectures

2023-24 **Lecturer** *QCD and collider physics* - University of Freiburg, Germany
→ Alternating between lecture and exercise classes

04/2019 **Lecturer** *Standard model, higher orders, and VBF/VBS* - University of Pavia, Italy
→ PhD programme (10 hours)

04/2018 **Lecturer** *Introduction to electroweak corrections*
→ *First EWSB spring school* (3 hours) - Maratea, Italy

2025-26 **Senior assistant** *Mathematics II* (in German) - University of Freiburg, Germany
→ Organiser of tutorials

2024 **Senior assistant** *Classical Mechanics* (in German) - University of Freiburg, Germany
→ Organiser of tutorials and designing of exercise sheets

2023 **Senior assistant** *Quantum Mechanics* (in German) - University of Freiburg, Germany
→ Organiser of tutorials and designing of exercise sheets/exam

2022 **Senior assistant** *Mathematics I* (in German) - University of Freiburg, Germany
→ Organiser of tutorials and designing of exercise sheets/exam

2021-22 **Senior assistant** *Mathematics II* (in German) - University of Freiburg, Germany
→ Co-organiser of tutorials and designing of exercise sheets/exam

2021 **Senior assistant** *Classical Mechanics* (in German) - University of Freiburg, Germany
→ Co-organiser of tutorials and designing of exercise sheets/exam

2020-21 **Senior assistant** *Classical Electrodynamics* (in German) - University of Freiburg, Germany
→ Co-organiser of tutorials and designing of exercise sheets/exam

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2025 **Teaching assistant** *Introduction to Relativistic Quantum Field Theory* - University of Freiburg, Germany → Exercise classes and corrections of students' sheets, replacement in two lectures

2022-23 **Teaching assistant** *Mathematics II* (in German) - University of Freiburg, Germany
→ Exercise classes

2018 **Teaching assistant** *Classical Electrodynamics* (in German) - University of Würzburg, Germany
→ Exercise classes and designing of exercise sheets

2017-18 **Teaching assistant** *Advanced Quantum Field Theory* - University of Würzburg, Germany
→ Exercise classes and designing of exercise sheets

2015 **Teaching assistant** *Classical Mechanics* (in German) - RWTH Aachen, Germany
→ Exercise classes and corrections of students' sheets

2014 **Teaching assistant** *Quantum Mechanics* - RWTH Aachen, Germany
→ Exercise classes and corrections of students' sheets

2012-13 **Teaching assistant** *Classical Electrodynamics* - RWTH Aachen, Germany
→ Exercise classes and corrections of students' sheets

Supervision

2023-present **Supervision** of a PhD student - University of Freiburg, Germany
→ *Higher-order EW corrections and parton-shower*

2023-present **Co-supervision** of a PhD student - University of Freiburg, Germany
→ *Higher-order corrections for tau production and decays*

2023 **Co-supervision** of a Master student - University of Freiburg, Germany
→ *Electroweak corrections in Drell-Yan*

2021-22 **Co-supervision** of a Master student - University of Freiburg, Germany
→ *Higher-order corrections for tau decays*

2019-20 **Co-supervision** of a PhD student - University of Cambridge, United Kingdom
→ *Higher-order corrections in QCD*

2014-15 **Co-supervision** of two Master students - RWTH Aachen, Germany
→ *Indirect Dark-Matter detection*

2013 **Supervision** of two Bachelor students for their thesis - RWTH Aachen, Germany
→ *Supersymmetric quantum mechanics*
→ *Two Higgs doublet model*

2012 **Supervision** of two Master students for literature seminar - RWTH Aachen, Germany
→ *Extra dimension models*

Leadership - Scientific Management

2025-now **Convener** of the Multiboson sub-group in LHC Electroweak Working Group

2021-now **Convener** of the VBF sub-group in LHC Higgs Working Group

2017-2021 **Working-group leader** of the VBSCan COST network (EU funded)

2026 **Convener** of Electroweak session, *LHCP 2026* - Paris (France)

2025 **Convener** of Higgs session, *EPS-HEP 2025* - Marseille (France)

2025 **Convener** of Electroweak session, *SM@LHC* - Durham (United Kingdom)

2024 **Organiser** of *VBF: Collaborative Advances in Theory and Experiment* - CERN (Switzerland)

2024 **Convener** of Higgs, electroweak, BSM physics session, *QCD@LHC* - Freiburg (Germany)

2023 **Convener** of phenomenology session, *DESY Theory Workshop* - Hamburg (Germany)

2023 **Convener** of *Les Houches workshop 2023: Physics at TeV Colliders*, Les Houches (France)

2022 **Organiser and chair** of *Past, present, and future of VBF* workshop - CERN (Switzerland)

2022 **Convener** of phenomenology session, *DESY Theory Workshop* - Hamburg (Germany)

2022 **Convener** of the Electroweak session, *LHCP 2022* - Taipei (Taiwan)

2021 **Session chair**, *MBI conference 2021*, Milan (Italy)

2021 **Group coordinator**, *Fall school for HEP: Maria Laach*, Bad Honnef (Germany)

2021 **Convener**, *Les Houches workshop 2021: Physics at TeV Colliders*, Les Houches (France)

2021 **Session Chair**, *DPG Meeting* - QCD and electroweak interactions, Dortmund (Germany)

2020 **Organiser**, Workshop on *Effective Field Theory in Polarised VBS*, online

2019 **Convener** of the Electroweak session, *LHCP 2019* - Puebla (Mexico)

2017 **Organiser** of workshop *Monte-Carlo description of VBS* - Amsterdam (Netherlands)

2017-2019 **Programme organiser and chair**, VBSCan meetings: Split (Croatia) [2017], Thessaloniki (Greece) [2018], CERN (Switzerland) [2018], Ljubljana (Slovenia) [2019], Istanbul (Turkey) [2019] (programme organiser only), Helsinki (Finland) [2020]

2017-now **Referee** for Physical Review Letters (PRL), Journal of High Energy Physics (JHEP), European Physical Journal C (EPJC), Physical Review D (PRD), Computer Physics Communications (CPC), and SciPost Physics.

2025 **Editor**, *EPS-HEP 2025 proceedings* Higgs Physics

2020 **Editor**, *VBSCan Mid-Term Scientific Meeting: proceedings* [2004.00726]

2019 **Editor**, *VBSCan Thessaloniki 2018 Workshop: proceedings* [1906.11332]

2018 **Editor**, *Vector-boson scattering: Recent experimental and theory developments* [1801.04203]

2017 **Section coordinator**, *Les Houches workshop 2017 Standard-Model report* [1803.07977]

01/2025 **External reviewer** for PhD thesis, IFIC and University of Valencia (Spain)

12/2022 **External reviewer** for PhD examination, LLR, Paris (France)

2021-2024 **Representative** of postdoctoral researchers in graduate school (University of Freiburg)

2019 **Member of Scientific Committee** of international workshop *BSM models in Vector-Boson Scattering processes* – Lisbon (Portugal)

2018-20 **Representative** of the United Kingdom in VBSCAN COST network (EU funded)

2017-18 **Representative** of Germany in VBSCAN COST network (EU funded)

2021-22 **Organiser** of bi-weekly graduate-school seminar (University of Freiburg)

2020-2022 **Organiser** of bi-weekly student research seminar (University of Freiburg)

2018-20 **Organiser** of weekly institute seminar (University of Cambridge)

2015-18 **Organiser** of weekly institute seminar (University of Würzburg)

2020-now **Mentor** of 6 PhD students (University of Freiburg)

Funding

01/2026 Application to **ERC Consolidator Grant 2026** call (ERC-2022-CoG). Decision pending.

2023 **PhD position** from DFG - 200k Euros. *Electroweak parton shower for high-energy particle collisions*. Three years, co-Pi with Stefan Dittmaier.

06/2020 Step 2 of the **ERC Starting Grant 2020** call (ERC-2020-StG). Not funded.

11/2019 **Travel grant** from COST EU agency - 1k Euros.
One-week visit at University of Würzburg, Germany.

03/2017 **Travel grant** from COST EU agency - 1k Euros.
One-week visit at Nikhef - Amsterdam, Netherlands.

03/2011 **Mobility grant** Explo'RA, Rhone-Alpes region - 2k Euros.
Six-months project at University of Portsmouth, United Kingdom.

07/2010 **Summer Studentship** Scheme, University of Glasgow - 1k Pounds.
Three-months project at University of Glasgow, United Kingdom.

Invited Presentations

57 invited presentations (listed below) + 35 additional presentations at international conferences and workshops.

04/2026 *Quantum simulation in particle physics*,
Colloquium, PSI, Villigen (Switzerland).

07/2025 *Vector-boson scattering and the Higgs boson*,
Plenary, Higgs Hunting 2025, Paris (France).

03/2025 *Stress testing the Electroweak sector via Vector-Boson Scattering and related processes at the LHC*, **Seminar**, IJCLab, Orsay (France).

11/2024 *The polarisation of weak bosons: precision and new ideas for the LHC*, **Theory Seminar**, CERN, Geneva (Switzerland).

11/2024 *Vector-boson scattering at the LHC*, **Cross Collider Talk**, CERN, Geneva (Switzerland).

09/2024 *Machine-learning methods for polarisation tagging*, COMETA workshop on vector-boson polarisations, Toulouse (France).

04/2024 *Precise Standard-Model predictions for tri-boson*, COMETA meeting on triple vector-boson production (online).

04/2024 *Theoretical advances in EW/Higgs/Top physics at the LHC*, **Plenary**, DIS2024, Grenoble (France).

03/2024 *Quantum computing for high-energy physics simulations*, **Seminar**, LAPTh, Annecy (France).

03/2024 *Higgs-related processes at the LHC: definition and measurement*, ATLAS HWW Workshop, Freiburg (Germany).

03/2024 *Theory input for the measurement of W+c production at the LHC*, **Seminar**, LPTHE, Paris (France).

03/2024 *The polarisation of weak bosons: precision and new ideas for the LHC*, **Seminar**, LLR, Paris (France).

01/2024 *Quantum computing for high-energy physics simulations*, **Seminar**, University of Milan (Italy).

01/2024 *Quantum computing for high-energy physics simulations*, **Seminar**, IPHC, Strasbourg (France).

12/2023 *Theory input for the measurement of W+c production at the LHC*, **Seminar**, Florida State University (USA).

09/2023 *Vector boson plus heavy flavour at the LHC*, **Plenary**, QCD@LHC, Durham (United Kingdom).

08/2023 *The polarisation of weak bosons: precision and new ideas for the LHC*, **Seminar**, University of Bern (Switzerland).

06/2023 *Theory predictions for top-pair production at collider experiments*, **Seminar**, University of Vienna (Austria).

03/2023 *Theoretical precision in W+c production at the LHC*, 2^{nd} CMS Workshop on V+jets Physics, CERN, Geneva (Switzerland).

02/2023 *Precision in W+c production at the LHC*, **Seminar**, MPI Munich (Germany).

09/2022 *Theoretical advancements in VBS processes*, CMS Italia VBS meeting, CERN, Geneva (Switzerland).

08/2022 *Quantum integration of elementary particle processes*, MIAPP workshop, Munich (Germany).

08/2022 *NLO EW Overview for Multi-bosons and VBS at LHCb*, **Plenary**, MBI 2022, Shanghai (China).

05/2022 *NLO EW in diboson and VBS*,
CMS multiboson workshop, CERN, Geneva (Switzerland).

04/2022 *Precision calculations for multiboson production and VBS*,
Plenary, SM@LHC, CERN, Geneva (Switzerland).

03/2022 *Polarisation in W+jets*,
1$^{\text{st}}$ CMS Workshop on V+jets Physics, CERN, Geneva (Switzerland).

01/2022 *New physics opportunities for W+jet at the LHC*,
Seminar, University of Würzburg (Germany).

09/2021 *Precise predictions for di-Higgs VBF production*,
Plenary, Higgs Hunting 2021, Paris (France).

06/2021 *EW corrections for SM processes*,
Physics at TeV Colliders 2021, Les Houches (France).

05/2021 *Fixed-order and merged parton-shower predictions for WW and WWj production at the LHC including NLO QCD and EW corrections*, LHC EW working group, CERN (Switzerland).

04/2021 *Vector-boson scattering at the LHC: unravelling the Electroweak sector*,
Seminar, University of Freiburg (Germany).

03/2021 *Stress testing the Standard Model via vector-boson scattering at the LHC*,
Invited topical talk DPG Meeting, Dortmund (Germany).

12/2020 *Theoretical predictions for Higgs measurements at the LHC*,
Seminar, Heidelberg (Germany).

11/2020 *Full NLO QCD corrections to off-shell ttbb production*,
Seminar, RWTH Aachen (Germany).

10/2020 *Multi-particle final states at 1-loop EW*,
CEPC workshop, Shanghai (China).

07/2020 *Precise predictions for double-Higgs production via vector-boson fusion*,
LHC-HH Subgroup Meeting (online).

05/2020 *Vector bosons plus jets at the LHC*,
LHCP2020, Paris (France).

05/2020 *Theoretical predictions for processes with many legs at the LHC*,
Seminar, Milan (Italy).

01/2020 *Off-shell effects in tt and ttH production*,
Plenary, ZPW2020, Zurich (Switzerland).

11/2019 *Theoretical predictions for processes with many legs at the LHC*,
Seminar, Nikhef (Netherlands).

09/2019 *Theoretical predictions for ttH production - NLO QCD + NLO EW*,
Plenary, TOP2019, Beijing (China).

09/2019 *What can we do better: Precision electroweak*,
Plenary, ATLAS Standard-Model workshop, Belgrade (Serbia).

02/2019 *Theory predictions for vector-boson scattering at the LHC*,
Seminar, IPPP Durham (United Kingdom).

10/2018 *Vector-boson scattering at the LHC*,
Seminar, University of Cambridge (United Kingdom).

09/2018 *Production of top quark pairs at the LHC: NLO corrections and off-shell effects*,
Seminar, University of Zurich (Switzerland).

08/2018 *Theory input for VBS*,
QCD@LHC, Dresden (Germany).

07/2018 *Top quark at the LHC: NLO corrections and off-shell effects*,
Seminar, DESY Hamburg (Germany).

04/2018 *Theory developments in VBS simulations*,
Plenary, SM@LHC, Berlin (Germany).

03/2018 *Vector-boson scattering at the LHC*,
Seminar, University of Cambridge (United Kingdom).

02/2018 *High-precision description of VBS at the LHC*,
CMS meeting, CERN (Switzerland).

01/2018 *NLO corrections for processes involving off-shell top quarks*,
Seminar, Freiburg (Germany).

08/2017 *Status of EW NLO corrections for multi-boson processes*,
Plenary, MBI 2017, KIT / Karlsruhe (Germany).

05/2017 *Automated computations of EW corrections using Sherpa+Recola*,
Rencontres de Blois 2017, Blois (France).

05/2017 *NLO EW corrections for processes involving off-shell top quarks*,
Seminar, Göttingen University (Germany).

04/2017 *Higgs production in association with off-shell top-antitop pairs at NLO EW and QCD*,
CMS generator meeting, CERN - Geneva, (Switzerland).

03/2017 *NLO electroweak corrections to off-shell top–antitop production with leptonic decays at the LHC*,
DPG Meeting - Münster University (Germany).

01/2015 *NLO accuracy for Supersymmetric processes at the LHC*,
Seminar - Würzburg University (Germany).

03/2013 *Basics of AdS / CFT correspondence*,
Seminar - Department of Mathematics - University of Brest (France).

Referees

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