

# Prof. Dr. Malgorzata Worek

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## Curriculum Vitae

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### Contact Information

Address Institute for Theoretical Particle Physics and Cosmology  
RWTH Aachen University  
Otto-Blumenthal-Str. 12  
52074 Aachen, Germany

Phone +49 241 8025727

Email [worek@physik.rwth-aachen.de](mailto:worek@physik.rwth-aachen.de)

webpage [web.physik.rwth-aachen.de/user/worek/](http://web.physik.rwth-aachen.de/user/worek/)

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### Education

- 2015 **Habilitation in Physics**  
RWTH Aachen University, Aachen, Germany  
Thesis title: *Looking at the Top - Top Quark Physics at Hadron Colliders at Next-To-Leading Order*
- 2003 **Ph.D. in Physics**  
Ph.D. with distinction, University of Silesia, Katowice, Poland  
Thesis title: *Spin Correlations of the Heavy Flavors as a Signal for Higgs Bosons*  
Supervisors: Prof. Dr. habil. Marek Jeżabek & Prof. Dr. habil. Zbigniew Wąs
- 2002 – 2003 Marie Curie Training Fellowship, TTP, Karlsruhe University, Karlsruhe, Germany  
October 2002 – March 2003
- 1999 – 2003 Ph.D. studies in Theoretical Particle Physics, University of Silesia, Katowice, Poland  
Ph.D. fellowship for the whole period of studies
- 1999 **Master of Science in Theoretical Physics**  
M.Sc. with the highest grade, University of Silesia, Katowice, Poland  
Thesis title: *Scalar Fields in Inflationary Models*  
Supervisor: Prof. Dr. habil. Ryszard Mańka
- 1997 – 1999 Master studies in Theoretical Physics, University of Silesia, Katowice, Poland  
Scholarship for an outstanding student
- 1994 – 1997 General studies in Physics, University of Silesia, Katowice, Poland  
Scholarship for an outstanding student

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## Professional Appointments

- Since 2021 Professor (apl. Prof.) RWTH Aachen University, Germany
- Since 2015 Associate Professor (Priv.-Doz.) RWTH Aachen University, Aachen, Germany
- Since 2013 Academic staff (tenured position) RWTH Aachen University, Aachen, Germany
- 2012 – 2013 Academic staff (tenured position) University of Wuppertal, Wuppertal, Germany
- 2008 – 2012 Academic staff (tenure-track position), University of Wuppertal, Wuppertal, Germany
- 2006 – 2008 Postdoctoral Researcher, ITP, Karlsruhe University, Karlsruhe, Germany
- 2006 Academic staff (Assistant Professor), Institute of Nuclear Physics, Cracow, Poland
- 2005 – 2006 Academic staff (Research Assistant), Institute of Nuclear Physics, Cracow, Poland
- 2003 – 2005 Postdoctoral Researcher (Marie Curie Fellowship), National Centre of Scientific Research "Demokritos", Institute of Nuclear Physics, Athens, Greece
- 2003 Academic staff (Research Assistant), Institute of Nuclear Physics, Cracow, Poland

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## Scientific Interests

- Phenomenology of the Standard Model at the Large Hadron Collider
- Top-quark and Higgs-boson physics
- Higher order QCD & EW corrections to multi-particle processes
- Efficient numerical evaluation of multi-particle final states
- Matching of multi-leg amplitudes with parton showers

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## Five Most Important Publications

- *$t\bar{t}b\bar{b}$  at the LHC: on the size of corrections and  $b$ -jet definitions*  
G. Bevilacqua, H.-Y. Bi, H. B. Hartanto, M. Kraus, M. Lupattelli and M. Worek  
[JHEP 08 \(2021\) 008](#)
- *The simplest of them all:  $t\bar{t}W^\pm$  at NLO accuracy in QCD*  
G. Bevilacqua, H.-Y. Bi, H. B. Hartanto, M. Kraus and M. Worek  
[JHEP 08 \(2020\) 043](#)
- *Hard Photons in Hadroproduction of Top Quarks with Realistic Final States*  
G. Bevilacqua, H. B. Hartanto, M. Kraus, T. Weber, M. Worek  
[JHEP 10 \(2018\) 158](#)
- *Top Quark Pair Production in Association with a Jet with Next-to-Leading-Order QCD Off-Shell Effects at the Large Hadron Collider*  
G. Bevilacqua, H. B. Hartanto, M. Kraus and M. Worek  
[Phys. Rev. Lett. 116 \(2016\) 052003](#)
- *Constraining BSM Physics at the LHC: Four top final states with NLO accuracy in perturbative QCD*  
G. Bevilacqua, M. Worek  
[JHEP 07 \(2012\) 111](#)

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## Monte Carlo Programs

### HELAC-NLO/HELAC-DIPOLES

A program for the Catani-Seymour dipole subtraction for arbitrary helicity eigenstates of the external partons as well as for the Nagy-Soper subtraction scheme for the random polarisation and colour sampling of the external partons. Phase space integration of subtracted real radiation and integrated dipoles in both massless and massive cases is implemented and performed with the help of the KALEU MC program. A phase space restriction on the contribution of the subtraction terms is also added.

### HELAC-NLO/HELAC-1LOOP

A program for numerical evaluation of QCD virtual corrections to scattering amplitudes with the OPP reduction method as implemented in CUTTOOLS in combination with ONELOOP for the calculation of one-loop scalar functions.

### HELAC-PHEGAS

A multi-purpose, tree-level event generator which is the implementation of the algorithm based on Dyson-Schwinger recursive equations. It can be used to efficiently obtain helicity amplitudes and total cross sections for arbitrary multi-particle processes in the Standard Model. The program can generate all processes with 10 or more final state particles with full off-shell and finite width effects. All electroweak vertices in both Feynman and unitary gauges have been included.

### VBFNLO

A fully flexible parton level Monte Carlo program for the simulation of vector boson fusion, double and triple vector boson production in hadronic collisions at next to leading order in the strong coupling constant. VBFNLO includes Higgs and vector boson decays with full spin correlations and all off-shell effects. A variety of effects arising from beyond the Standard Model physics are implemented for selected processes.

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## Third Party Funding

- 2024 – 2027 Federal Ministry of Education and Research (BMBF), BMBF-Projekt  
*Theoretische Unterstützung für physikalische Analysen am LHC*  
Principal Investigator
- 2021 – 2024 Federal Ministry of Education and Research (BMBF), BMBF-Projekt  
*Theoretische Studien zur Physik an Teilchenbeschleunigern*  
Principal Investigator
- 2019 – 2028 German Research Foundation (DFG), Research Training Group ([RTG 2497](#))  
*Physics of the heaviest particles at the Large Hadron Collider*  
Principal Investigator  
Approved for the second funding period
- 2019 – 2026 German Research Foundation (DFG), Transregional Collaborative Research Center ([TRR 257](#))  
*P3H – Particle Physics Phenomenology after the Higgs Discovery*  
Principal Investigator

- Approved for the second funding period
- 2018 – 2021 Federal Ministry of Education and Research (BMBF), BMBF-Projekt  
*Elementarteilchenphysik mit dem CMS-Experiment sowie die theoretische Physik des Top-Quarks*  
Principal Investigator
- 2016 – 2020 German Research Foundation, Individual Research Grant (WO 1900/2)  
*Top-Quarks under the LHC's Magnifying Glass: From Process Modelling to Parameter Extraction*  
Principal Investigator
- 2013 – 2016 German Research Foundation, Individual Research Grant (WO 1900/1)  
*Signals and Backgrounds Beyond Leading Order. Phenomenological studies for the LHC*  
Principal Investigator
- 2004 – 2005 Polish State Committee for Scientific Research, Research Grant 1P03B00927  
*Two loop QED corrections to the Bhabha process*  
Principal Investigator
- 2002 – 2003 Polish State Committee for Scientific Research, Research Grant 2P03B00122  
*Precise expectation for the models of the quantum field theory in the high energy physics experiments*  
Principal Investigator
- 2001 – 2002 Polish State Committee for Scientific Research, Individual Research Grant 5P03B10121  
*Higgsola - A library of Monte Carlo programs to simulate decays of Higgs boson*  
Principal Investigator
- 2001 – 2003 Polish State Committee for Scientific Research, Research Grant 5P03B09320  
*Theoretical study of the fundamental fermions and their interactions*  
Principal Investigator

## Memberships in Boards, Committees and Panels

- Since 2025 (Theory) Chairperson of the International Advisory Committee for the International Workshop on Top Quark Physics (TOP)
- 2024 Expert for focus evaluation of the research environment at the Department of Physics at Stockholm University, Stockholm, Sweden
- Since 2024 Chairperson of the NT-L Astronomy and Subatomic Physics review panel at the Swedish Research Council (VR), Stockholm, Sweden
- Since 2024 Member of the International Programme Committee for the Biennial Workshop on Elementary Particle Physics: *Loops and Legs in Quantum Field Theory*
- 2023 Chairperson of the scientific WT 2 Fellowship panel on Physics at the Research Foundation Flanders (FWO), Brussels, Belgium

- Since 2023 Member of the International Advisory Committee for the Biennial Conference: *Matter To The Deepest*
- Since 2022 Panel member for the evaluation of proposals for MSCA Postdoctoral Fellowships ([HORIZON-MSCA-PF](#)), European Research Executive Agency (REA), European Commission (EC), Brussels, Belgium
- Since 2022 Convener of the  $t\bar{t}H/tH$  group for WG1: Higgs XS & BR in the framework of the LHC Higgs Working Group
- 2021 Chairperson of the International Advisory Committee for the 14th International Workshop on Top Quark Physics ([TOP2021](#))
- Since 2021 Panel member for the scientific WT 2 Fellowship panel on Physics at the Research Foundation - Flanders ([FWO](#)), Brussels, Belgium
- Since 2020 Panel member for the NT-L Astronomy and Subatomic Physics review panel at the Swedish Research Council ([VR](#)), Stockholm, Sweden
- Since 2019 Member of the International Advisory Committee for the Annual International Workshop on Top Quark Physics: *TOP*
- Since 2019 Member of the board of the Research Training Group 2497
- 2019 – 2024 Member of the board of the Transregional Collaborative Research Centre 257

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## Reviewing Activities

- Reviewer for the German Research Foundation ([DFG](#))
- Reviewer for the Research Foundation – Flanders ([FWO](#))
- Reviewer for the Czech Science Foundation ([GACR](#))
- Reviewer for the Dutch Research Council ([NWO](#))
- Reviewer for the National Science Centre – Poland ([NCN](#))

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## Referee for Scientific Journals:

- Physical Review Letters ([PRL](#))
- Journal of High Energy Physics ([JHEP](#))
- European Physical Journal C ([EPJ C](#))
- Physical Review D ([PRD](#))
- Physics Letters B ([PLB](#))
- Computer Physics Communications ([CPC](#))
- SciPost Physics ([SciPost](#))

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## Other Professional Activities

- 2023 – 2024 Short-Term Associate (STA) for the  $pp \rightarrow t\bar{t}j$  process for the ATLAS Collaboration

- 2023 – 2024 Short-Term Associate (STA) for the  $pp \rightarrow t\bar{t}b\bar{b}/t\bar{t}jj$  process for the ATLAS Collaboration
- 2021 – 2022 Short-Term Associate (STA) for the  $pp \rightarrow t\bar{t}W^\pm$  process for the ATLAS Collaboration  
Since 2019 Equal Opportunities Officer of the DFG Research Training Group (RTG 2497)
- 2019 – 2024 Equal Opportunities Officer of the DFG Transregional Collaborative Research Center (TRR 257)
- 2019 – 2020 Analysis Consultant and Expert (ACE) for Top Quark Physics for the ATLAS Collaboration
- 2018 – 2021 Working Group Leader of the COST Action CA16201 ParticleFace - Unraveling new physics at the LHC through the precision frontier  
Since 2016 Equal Opportunities Officer of the Faculty of Mathematics, Computer Science and Natural Sciences, RWTH Aachen University  
Since 2015 Organiser of the Women in High Energy Physics Network and Webpage
- 2014 – 2024 Coordinator of the International Master Program in Physics, RWTH Aachen University

## Supervision

### ○ **PhD Students:** 4 ongoing, 6 completed

Since 2024 Leon Mans, M.Sc. RWTH

Since 2023 Manal Alsairafi, M.Sc.

Since 2022 Nikolaos Dimitrakopoulos, M.Sc.

Since 2022 Minos Reinartz, M.Sc. RWTH

07/2024 Dr. Daniel Stremmer (currently, postdoc, KIT, Karlsruhe, Germany)

09/2023 Dr. Jonathan Hermann (career outside academia)

09/2023 Dr. Michele Lupattelli (currently, postdoc, University of Münster, Münster, Germany)

10/2022 Dr. Jasmina Nasufi (career outside academia)

12/2020 Dr. Torsten Weber (career outside academia)

09/2016 Dr. Manfred Kraus (currently, research Associate, National Autonomous University of Mexico (UNAM), Mexico City, Mexico)

### ○ **Master Students:** 1 ongoing, 9 completed

Since 2025 Johannes Welter, B.Sc. RWTH

09/2024 Leon Mans, M.Sc. RWTH

09/2021 Minos Reinartz, M.Sc. RWTH

09/2021 Daniel Stremmer, M.Sc. RWTH

09/2020 Oleg Komoltsev, M.Sc. RWTH

09/2020 Jonathan Hermann, M.Sc. RWTH

03/2019 Lalu Zamakhsyari, M.Sc. RWTH

- 02/2019 Kai Porten, M.Sc. RWTH
- 12/2015 Lars Poschwatta, M.Sc. RWTH
- 09/2015 Daniel Schröder, M.Sc. RWTH
  - **Bachelor Students:** 9 completed
- 09/2024 Oguzhan B. Sen, B.Sc. RWTH
- 09/2024 Jarema Pidstrigach, B.Sc. RWTH
- 07/2019 Daniel Stremmer, B.Sc. RWTH
- 07/2018 Benjamin Habicht, B.Sc. RWTH
- 07/2018 Minos Reinartz, B.Sc. RWTH
- 09/2017 Hanno Jacobs, B.Sc. RWTH
- 07/2017 Jasmina Nasufi, B.Sc. RWTH
- 09/2016 Simon Kerris, B.Sc. RWTH
- 07/2016 Nils Schöneberg, B.Sc. RWTH

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## Teaching Experience

Since 2010 **Lecture Courses:**

Relativistic Quantum Theory

Special Relativity

GETA – Foundations of Elementary Particle and Astroparticle Physics

The Standard Model - Combined course on Quantum Field Theory in Particle Physics and The Standard Model in Experiment

Since 1999 **Teaching Assistant:**

Electrodynamics, Quantum Mechanics, Relativistic Quantum Theory, Classical Mechanics, Undergraduate Seminar on Particle Physics, Undergraduate Seminar on Collider Physics, Algebra, Mathematical Methods in Physics, Elementary Computing

**Invited Lectures:**

March/April 2009 Computer Algebra and Particle Physics School (CAPP 2009), DESY, Zeuthen, Germany, *Helicity amplitudes and HELAC-PHEGAS*

April 2009 Terascale Monte Carlo School, DESY, Hamburg, Germany  
*Simulation of multi-jet backgrounds*

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## Organisation of Scientific Meetings & Session Convener

October 2025 Organiser of the MITP, Mainz Institute for Theoretical Physics – *Particle Physics Phenomenology after the Higgs Discovery* ([P3HD2025](#)), Johannes Gutenberg University Mainz

September 2025 Organiser of the 18th International Workshop on Top Quark Physics ([TOP 2025](#)), Hanyang University, Seoul, South Korea

- September 2025 Organiser of the outreach program *Aachen Physics Project Days* for high-school female students – Physik-Projekt-Tage Aachen ([PPT 2025](#))  
RWTH Aachen University, Aachen, Germany
- September 2024 Organiser of the 17th International Workshop on Top Quark Physics ([TOP 2024](#)),  
Saint-Malo, Brittany, France
- August 2024 Organiser of the outreach program *Aachen Physics Project Days* for high-school female students – Physik-Projekt-Tage Aachen ([PPT 2024](#))  
RWTH Aachen University, Aachen, Germany  
[Brigitte Gilles Prize 2024](#) in the category projects, initiatives, and individuals at schools or extracurricular institutions that contribute to awakening and supporting women students' interest in the disciplines of mathematics, computer science, natural sciences, and technology (STEM subjects)
- September 2023 Organiser of the 16th International Workshop on Top Quark Physics ([TOP 2023](#)),  
Traverse City, Michigan, USA
- September 2022 Organiser of the 15th International Workshop on Top Quark Physics ([TOP 2022](#)),  
Durham University, UK
- July 2022 Convener of the Top quark and EW Physics Session  
The XLI International Conference on High Energy Physics ([ICHEP 2022](#)), Bologna, Italy
- May 2022 Convener of the Top Physics Session  
The Tenth Annual Large Hadron Collider Physics conference ([LHCP2022](#)), Online
- April 2022 Convener of the Top-quark Session  
The Standard Model at the LHC workshop ([SM@LHC 2022](#)), CERN, Switzerland
- September 2021 Organiser of the 14th International Workshop on Top Quark Physics ([TOP 2021](#)),  
Michigan State University and other North American Institutions, Online
- September 2020 Organiser of the 13th International Workshop on Top Quark Physics ([TOP 2020](#)),  
IPPP Durham, Durham University, UK, Online
- September 2020 Organiser of the Annual Meeting of the Research Training Group (RTG–2497) - *Physics of the Heaviest Particles at the LHC*, RWTH Aachen University, Physikzentrum, Aachen, Germany
- September 2019 Organiser of the 12th International Workshop on Top Quark Physics ([TOP 2019](#)),  
Institute of High Energy Physics (IHEP), Beijing, China
- September 2018 Organiser of the 11th International Workshop on Top Quark Physics ([TOP 2018](#)), Bad  
Neuenahr, Germany
- September 2018 Organiser of the [1st Workshop on High Energy Theory and Gender](#), CERN, Geneva, Switzerland
- March 2017 Convener of the Top-Quark Physics Theory Session  
The 81<sup>st</sup> Annual Conference of the DPG and DPG Spring Meeting, Westfälische Wilhelms-Universität Münster, Münster, Germany
- March 2017 Organiser of the Workshop on [Taming Unphysical Scales for Physical Predictions](#), Emmanuel College, Cambridge University, Cambridge, UK



- September 2016 Convener of the Particle Phenomenology Session  
 2016 [The DESY Theory Workshop - Rethinking Quantum Field Theory](#), DESY Hamburg, Germany
- June 2016 Convener of the Top Quark Physics Session  
 The Fourth Annual Large Hadron Collider Physics Conference ([LHCP2016](#)), Lund University, Lund, Sweden
- April 2011 Organiser of the [Alliance Workshop on Top Quark Physics](#), University of Wuppertal, Wuppertal, Germany
- September 2009 Organiser of the 33th International Conference of Theoretical Physics, *Matter to the deepest - Recent developments in physics of fundamental interactions*, Ustron'09, Ustroń, Poland
- June 2009 Organiser of the [Mini-workshop on fixed order multi-leg automatic NLO calculations](#), University of Wuppertal, Wuppertal, Germany
- September 2003 Organiser of the 27th International Conference of Theoretical Physics, *Matter to the deepest - Recent developments in physics of fundamental interactions*, Ustron'03, Ustroń, Poland
- September 2001 Organiser of the 25th International School of Theoretical Physics, Particles and Astrophysics: Standard Models And Beyond, Ustroń, Poland

## Plenary Talks

- May 2024 Ringberg 2024: 2nd Workshop on Tools for High Precision LHC Simulations, Castle Ringberg, Reitrain, Germany  
[Complete NLO corrections to top-quark pair production with isolated photons](#)
- March 2023 86. Annual Meeting of DPG and DPG Spring Meeting of the Matter and Cosmos Section (SMuK), Dresden, Germany  
[QCD at the LHC – Precision for Discoveries](#)
- September 2022 DESY Theory Workshop, Higgs, Flavour and Beyond, DESY Hamburg, Germany  
[Top Physics – Precision for Discoveries](#)
- April 2022 Loops and Legs in Quantum Field Theory. The 16th Workshop on Elementary Particle Physics, Ettal, Germany  
[Production and decay of a heavy boson in association with top quarks](#)
- November 2021 The 11th International Workshop on the CKM Unitarity Triangle (CKM2021), University of Melbourne, Australia (Online)  
[Theoretical overview on top quark physics](#)
- June 2021 The 9th Annual Large Hadron Collider Physics Conference (LHCP2021) (Online)  
[Theoretical aspects of top physics](#)
- September 2020 13th International Workshop on Top-Quark Physics (TOP 2020), Durham University, Durham, UK (Online)  
[Off-shell vs on-shell modelling of top quarks in photon associated production](#)
- September 2020 QCD@LHC-X conference, CERN, Geneva, Switzerland (Online)  
[A view on the top quark](#)

- March 2017 Taming Unphysical Scales for Physical Predictions, Workshop on renormalisation and factorisation scale choices for precision predictions of cross sections at the LHC, Emmanuel College, University of Cambridge, Cambridge, UK  
*Scales for top quark production with a jet including decays and off-shell effects through NLO*
- January 2017 The XXIII Cracow Epiphany Conference on Particle Theory Meets the First Data from LHC Run2, Institute of Nuclear Physics Polish Academy of Sciences, Krakow, Poland  
*Off-shell top quarks with one jet at the LHC*
- September 2016 The 9th International Workshop on Top Quark Physics (TOP 2016), Olomouc, Czech Republic  
*Off-shell  $t\bar{t}$ +jet Production*
- April 2016 The 13th Workshop on Loops and Legs in Quantum Field Theory, Leipzig, Germany  
*NLO QCD corrections to off-shell  $t\bar{t}j$  production at the LHC*
- March 2016 The 50th Anniversary Meeting of Rencontres de Moriond – QCD and High Energy Interactions, La Thuile, Italy  
*Top Pair Production with a Jet with NLO QCD Off-Shell Effects*
- June 2015 UCLA Radcor-Loopfest Symposium (RADCOR 2015 and Loopfest XIV), UCLA, Los Angeles, USA  
*Matching the Nagy-Soper parton shower at NLO*
- September 2014 Topical Workshop on Top Quark Differential Distributions, Pierre et Vacances residence in Mandelieu near Cannes, France  
*Top Quark Physics with HELAC-NLO*
- September 2013 The 11th International Symposium on Radiative Corrections, Applications of Quantum Field Theory to Phenomenology (RADCOR 2013), Lumley Castle Hotel, Chester le Street, UK  
*NLO mass effects in  $b\bar{b}b\bar{b}$  production at the LHC*
- September 2012 The 5th International Workshop on Top Quark Physics (TOP 2015), Winchester, UK  
*Differential top pair cross-section and  $t\bar{t}$ +jets Physics*
- September 2012 Workshop on High Precision for Hard Processes at the LHC (HP2), MPI, Munich, Germany  
*Theoretical Predictions For Top Quark Pair Production At NLO QCD*
- September 2011 XXXV International Conference of Theoretical Physics, Ustron'11, Ustron, Poland  
*Phenomenological studies of top-pair production at NLO*
- May 2011 LoopFest X, Radiative corrections for the LHC and future colliders, Evanston, Illinois, USA  
*HELAC-NLO: Developments & Applications*
- September 2010 XL International Symposium on Multiparticle Dynamics (ISMD 2010), Antwerp, Belgium  
*Recent Developments in NLO QCD calculations*
- June 2010 The 3rd International Workshop on Top Quark Physics (TOP 2010), Bruges, Belgium  
*Next-to-Leading Order  $t\bar{t}$  plus Jets Physics with HELAC-NLO*
- March 2010 Rencontres de Moriond QCD and High Energy Interactions, La Thuile, Italy  
*Next-to-Leading Order  $t\bar{t}$  plus Jets Physics with HELAC-NLO*

- September 2009 XXXIII International Conference of Theoretical Physics, Matter To The Deepest: Recent Developments In Physics of Fundamental Interactions, Ustron, Poland  
*Assault on the NLO Wishlist:  $pp \rightarrow t\bar{t}b\bar{b}$*
- March 2009 The German Physical Society (DPG) Meeting, Munich, Germany  
*Monte Carlo Generators for the LHC*
- September 2007 XXXI International Conference of Theoretical Physics, Matter To The Deepest: Recent Developments In Physics of Fundamental Interactions, Ustron, Poland  
*Monte Carlo Generators for the LHC*
- April 2006 XIV International Workshop on Deep Inelastic Scattering (DIS2006), Tsukuba, Japan  
*HELAC - Monte Carlo generator for hard multi-parton processes*
- September 2005 XXIX International Conference of Theoretical Physics, Matter to the Deepest: Recent Developments in Physics of Fundamental Interactions, Ustron, Poland  
*Calculation of Multi-Particle Processes in the Standard Model*
- May 2005 The 10th International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT 05), Zeuthen, Germany  
*Multi-particle processes in QCD without Feynman diagrams*
- September 2003 XXVII International Conference of Theoretical Physics, Matter To The Deepest: Recent Developments In Physics of Fundamental Interactions, Ustron, Poland  
*CP nature of the Higgs boson in tau production at the LC*
- January 2003 Cracow Epiphany Conference on Heavy Flavors, Krakow, Poland  
*Determination of Higgs boson parity in  $\tau^+\tau^-$  decays*
- September 2001 XXV International School of Theoretical Physics Particles and Astrophysics Standard Models and Beyond, Ustron, Poland  
*Tau Polarization and Its Correlations as a Signal for Higgs Boson*

## Presentations at Conferences/Workshops/Meetings

- October 2024 Working Group 1 meeting on CERN Yellow Report 5 activities (Online)  
Talk:  *$t\bar{t}H$  &  $tH$  Working Group Report*
- June 2024 Working Group 1 kick-off meeting on CERN Yellow Report 5 activities (Online)  
Talk:  *$t\bar{t}H$  &  $tH$  Working Group Report*
- May 2024 Workshop on top-quark mass measurements, Valencia, Spain (Online)  
Talk:  *$pp \rightarrow t\bar{t}j$  at NLO in QCD – Off-Shell Calculations & Mass Extraction*
- April 2024 Loops and Legs in Quantum Field Theory 2024, Wittenberg, Germany  
Talk: *Complete NLO corrections to top-quark pair production with isolated photons*
- April 2024 CMS TOP physics group meeting (Online)  
Talk: *Complete NLO corrections to top-quark pair production with isolated photons*
- October 2023 Young Scientists Meeting of the Collaborative Research Center (TRR 257) *Particle Physics Phenomenology after the Higgs Discovery*, Siegen University, Siegen, Germany  
Talk: *Staying in Academia: Fellowship, Grants & More to Know*
- August 2023 Annual Meeting of the Research Training Group (RTG 2497) *Physics of the Heaviest Particles at the LHC*, Ringhotel Haus, Oberwinter, Germany  
Talk: *Staying in Academia: Fellowship, Grants & More to Know*

- August 2022 Annual Meeting of RTG 2497 – Physics of the Heaviest Particles at the LHC, Wiehl  
Talk: *Theoretical Aspects of Top-Quark Physics @ LHC*
- October 2021 LHC Higgs Working Group, WG1 Fall Meeting (Online)  
Talk: *Off-shell  $t\bar{t}b\bar{b}$  @ LHC with HELAC-NLO*
- September 2021 ATLAS Top WG Meeting (Online)  
Talk: *Precision physics for  $t\bar{t} + X$  @ LHC with HELAC-NLO*
- May 2021 Annual meeting of the CRC TRR 257, RWTH Aachen University, Aachen (Online)  
Talk: *Project reports: (High Precision SM) Collider phenomenology*
- October 2020 LHC Higgs WG1 -  $t\bar{t}H/tH$  Subgroup Meeting (Online)  
Talk: *Brief overview of theory results for on-shell  $t\bar{t}W^\pm$  production*
- October 2020 Annual Meeting of the CRC TRR 257, University of Siegen, Siegen  
Talk: *Project B1b: Precision top-quark physics at the LHC*
- October 2020 ATLAS HTop Workshop (Online)  
Talk: *Theory & MC for  $t\bar{t}V$*
- November 2019 CMS TOP Group Workshop 2019, DESY  
Talk: *Predictions for  $t\bar{t}V$  differential cross sections*
- September 2019 The 14th International Symposium on Radiative Corrections, Applications of Quantum Field Theory to Phenomenology (RADCOR 2019), Avignon, France  
Talk: *Cross section ratios as a precision tool for  $t\bar{t}\gamma$  at the LHC*
- March 2019 Kick-off Meeting of the Collaborative Research Center TRR 257, *Particle Physics Phenomenology after the Higgs discovery*, KIT, Karlsruhe  
Talk: *Project B1b: Top quark physics*
- November 2018 CMS PH Generator Meeting, CERN, Switzerland  
Talk: *NLO Off-Shell  $t\bar{t}\gamma$  Production with HELAC-NLO*
- April 2018 The 14th Workshop on Loops and Legs in Quantum Field Theory (LL2018), Sankt Goar, Germany  
Talk: *Off-shell  $t\bar{t}\gamma$  Production*
- October 2013 The 20th Meeting of the SFB/TR 9, Karlsruhe University, Karlsruhe, Germany  
Talk: *Application of Nagy-Soper Subtraction for NLO QCD*
- December 2012 The 6th Annual Workshop of the Helmholtz Alliance *Physics at the Terascale*, DESY Hamburg, Germany  
Talk: *Four top final states with NLO accuracy in perturbative QCD*
- March 2012 Alliance Top Quark Workshop 2012, Berlin, Germany  
Talk: *Theoretical predictions for top anti-top production at NLO*
- November 2009 The 3rd Annual Workshop of the Helmholtz Alliance *Physics at the Terascale*, DESY Hamburg, Hamburg, Germany  
Talk: *LO and NLO calculations with HELAC-PHEGAS*  
Talk: *NLO QCD corrections to  $pp \rightarrow t\bar{t}b\bar{b}$*
- October 2009 Meeting of the GDR Terascale in Heidelberg, Heidelberg, Germany  
Talk: *NLO calculations finally fully automatic (?)*

- December 2007 DESY-ATLAS Meeting, DESY-Hamburg, Germany  
 Talk: *HELAC-PHEGAS - The Swiss Army Knife of Leading Order Parton Level MC Generators*
- October 2007 Mini-Workshop on Massive Particle Production at the LHC, Berlin, Germany  
 Talk: *VBF Processes at the LHC with VBFNLO*
- November 2003 Workshop on Higgs Physics at Future Colliders, Warsaw University, Warszawa, Poland  
 Talk: *CP nature of the Higgs bosons from decays to  $\tau$  leptons*

## Seminars

- November 2023 Theory Seminar at the Max-Planck Institute in Munich, Munich, Germany (Online)  
 Talk: *QCD @ LHC - Precision for Discoveries*
- December 2022 Theoretical HEP Seminar, Technical University Munich, Munich, Germany (Online)  
 Talk: *Top Physics - Precision for Discoveries*
- May 2022 Research Training Group (RTG) Seminar Albert-Ludwigs-Universität Freiburg, Germany  
 Talk: *Theoretical Aspects of Top-Quark Physics at the LHC*
- January 2021 Seminar of the Institute of Nuclear Physics, Polish Academy of Sciences, Krakow, Poland (Online)  
 Talk: *Top quark at the LHC*
- November 2020 High Energy Physics Seminar, Michigan State University, USA (Online)  
 Talk: *(Modelling of) Top quark @ the LHC*
- June 2020 Center for Particle Physics Siegen (CPPS) seminar, University of Siegen, Siegen (Online)  
 Talk: *Modelling of top quarks in photon associated production*
- March 2017 Seminar for Theory of Elementary Interactions, University of Warsaw, Warsaw, Poland  
 Talk: *Off-shell Top Quarks with One Jet at the LHC*
- June 2016 HEP Theory Seminar, RWTH Aachen University, Aachen, Germany  
 Talk: *Precise Predictions for  $pp \rightarrow t\bar{t}j$  @ LHC*
- May 2016 Particle Theory Seminar, Eberhard Karls Universität Tübingen, Tübingen, Germany  
 Talk: *Precise Predictions for  $pp \rightarrow t\bar{t}j$  @ LHC*
- March 2016 Particle and Astro-Particle Physics Seminar, TH CERN, Geneva, Switzerland  
 Talk: *Top Quark Pair Production in Association with a Jet with NLO QCD Off-Shell Effects at the LHC*
- July 2015 Special Colloquium, RWTH Aachen University, Aachen, Germany  
 Talk: *Kilogram as a relic in physics: In search of a universal definition of the unit of mass*
- July 2014 Special Colloquium, RWTH Aachen University, Aachen, Germany  
 Talk: *Looking at the Top*
- January 2010 Seminar @ TU Dortmund, Dortmund, Germany  
 Talk: *LO & NLO Monte Carlos for the LHC*
- June 2008 Seminar @ MPI, Munich, Germany  
 Talk: *Monte Carlo Generators for the LHC*

- May 2008 Seminar @ TU Dresden, Dresden, Germany  
Talk: *Multi-Particle Processes at the LHC with HELAC*
- April 2008 Seminar @ KEK, Tsukuba, Japan  
Talk: *Multi-Particle Processes in the Standard Model with HELAC*
- March 2008 ATLAS MC Meeting CERN, Geneva, Switzerland  
Talk: *HELAC-PHEGAS - The Swiss Army Knife of Leading Order Parton Level MC Generators*
- January 2008 Seminar @ CMS Group at the IEKP, Karlsruhe University, Karlsruhe, Germany  
*HELAC-PHEGAS - The Swiss Army Knife of Leading Order Parton Level MC Generators*
- May 2007 Seminar @ Freiburg University, Freiburg, Germany  
Talk: *Monte Carlo Generators for the LHC*