

CURRICULUM VITAE: **Roberto BONCIANI**

Dipartimento di Fisica, Università di Roma “La Sapienza”,
Piazzale Aldo Moro 2, 00185 Roma, Italy

Tel: +39 06 49914584 (office)

e-mail: roberto.bonciani@roma1.infn.it
roberto.bonciani@uniroma1.it

PERSONAL DATA

Born in Florence, Italy, on February 19, 1970. Married. Three children.

EDUCATION

- **PhD in Physics** at the Department of Physics of the University of Bologna, Italy. Defense: March 9, 2001. Title of the Thesis: *2-loop radiative corrections to Bhabha scattering in QED*; supervisor Prof. E. Remiddi.
- **Degree in Physics** (Laurea) at the Department of Physics of the University of Florence, Italy. Defense: July 14, 1997. Final grade: 110/110. Title of the Thesis: *Risommazione di contributi perturbativi per sezioni d'urto di produzione di quarks pesanti in QCD* (Resummation of perturbative contributions for heavy-quark production cross-sections in QCD); supervisor Prof. S. Catani.

CURRENT POSITION

Professore di II fascia (Associate Professor) at the University of Rome “La Sapienza”, Rome, Italy.

ITALIAN SCIENTIFIC HABILITATION

Settore concorsuale 02/A2 (SSD FIS/02): habilitation obtained for “Professore di Prima Fascia” (Full Professor). Validity: 8/01/2014 – 8/01/2024.

PROFESSIONAL EXPERIENCE

- 2011-2017 Ricercatore (Assistant professor) at the Università di Roma “La Sapienza”, Rome, Italy.
- 2011 Marie Curie FP7-PEOPLE-2011-IEF. Project N. 302997. Title: *TOPPhysics*. (Actual dates: 1/12/2012—30/11/2014).
- 2011 “Ramon y Cajal”, spanish tenure track position (declined).
- 2008-2011 CNRS research position (CDD) at the LPSC, Laboratoire de Physique Subatomique et de Cosmologie, Grenoble, France.
- 2008 Post doctoral position at the Institute for Theoretical Physics of the University of Zürich, Switzerland.
- 2007-2008 Post doctoral position I3P, at IFIC, Instituto de Fisica Corpuscular, Valencia, Spain.
- 2006-2007 Post doctoral position of the MEC at IFIC, Instituto de Fisica Corpuscular, Valencia, Spain.
- 2005-2006 Post doctoral position of the European network "EURIDICE", under the contract HPRN-CT-2002-00311, at Department of Physics of the University of Valencia, Spain.
- 2004-2005 Post doctoral position at the Department of Physics of the University of Freiburg, Germany.

- 2002-2004 Post doctoral position of the European network "Particle physics phenomenology of high energy colliders", under the contract HPRN-CT-2000-00149, at the Department of Physics of the University of Freiburg, Germany.
- 2001-2002 "*Fondazione A. Della Riccia*" fellowship at the Th. Division of CERN, Geneva, Switzerland.
- 2000-2002 Post doctoral position at the Department of Physics of the University of Bologna, Italy.
- 1998 INFN grant (2 years) for post graduate studies (declined).
- 1997-2000 PhD at the Department of Physics of the University of Bologna, Italy.

TEACHING EXPERIENCE

- 2022-2023 Course "Modelli e Metodi Matematici della Fisica", 2nd year (Laurea triennale) 2nd semester, at the Physics Department of the University of Rome "La Sapienza", Italy.
60 hours.
- 2021-2022 Course "Introduction to Quantum Field Theory", 1st year of Master (Laurea Magistrale) 1st semester, at the Physics Department of the University of Rome "La Sapienza", Italy.
60 hours.
- 2021-2022 Course "Modelli e Metodi Matematici della Fisica", 2nd year (Laurea triennale) 2nd semester, at the Physics Department of the University of Rome "La Sapienza", Italy.
60 hours.
- 2020-2021 Course "Introduction to Quantum Field Theory", 1st year of Master (Laurea Magistrale) 1st semester, at the Physics Department of the University of Rome "La Sapienza", Italy.
60 hours.
- 2020-2021 Course "Modelli e Metodi Matematici della Fisica", 2nd year (Laurea triennale) 2nd semester, at the Physics Department of the University of Rome "La Sapienza", Italy.
60 hours.
- 2019-2020 Course "Relativistic Quantum Mechanics", 1st year of Master (Laurea Magistrale) 1st semester, at the Physics Department of the University of Rome "La Sapienza", Italy.
60 hours.
- 2019-2020 Course "Modelli e Metodi Matematici della Fisica", 2nd year (Laurea triennale) 2nd semester, at the Physics Department of the University of Rome "La Sapienza", Italy.
60 hours.
- 2018-2019 Course "Fisica Generale 1" (Mechanics and Thermodynamics), 2nd year (Laurea triennale) 1st semester, at the Mathematics Department of the University of Rome "La Sapienza", Italy.
72 hours.

- Course “Modelli e Metodi Matematici della Fisica”, 2nd year (Laurea triennale) 2nd semester, at the Physics Department of the University of Rome “La Sapienza”, Italy.
60 hours.
- 2017-2018 Course “Fisica Generale 1” (Mechanics and Thermodynamics), 2nd year (Laurea triennale) 1st semester, at the Mathematics Department of the University of Rome “La Sapienza”, Italy.
72 hours.
- Course “QCD”, 1st year course for the PhD in Physics, University of Roma Tre, Italy.
8 hours.
- 2016-2017 Course “Fisica Generale 1” (Mechanics and Thermodynamics), 2nd year (Laurea triennale) 1st semester, at the Mathematics Department of the University of Rome “La Sapienza”, Italy.
72 hours.
- Course “QCD”, 1st year course for the PhD in Physics, University of Roma Tre, Italy.
8 hours.
- 2015-2016 Course “Fisica Generale 1” (Mechanics and Thermodynamics), 2nd year (Laurea triennale) 1st semester, at the Mathematics Department of the University of Rome “La Sapienza”, Italy.
72 hours.
- 2014-2015 Instructor of the course “Meccanica” (Mechanics), 1st year (Laurea triennale) 2nd semester, of Prof. C. Bini, at the Physics Department of the University of Rome “La Sapienza”, Italy.
36 hours.
- 2013-2014 Instructor of the course “Laboratorio di Meccanica” (Laboratory of Mechanics), 1st year (Laurea triennale) 2nd semester, of Prof. C. Bini, at the Physics Department of the University of Rome “La Sapienza”, Italy.
36 hours.
- 2012-2013 Instructor of the course “Laboratorio di Meccanica” (Laboratory of Mechanics), 1st year (Laurea triennale) 2nd semester, of Prof. C. Bini, at the Physics Department of the University of Rome “La Sapienza”, Italy.
36 hours.
- 2010 Course “Topics in Perturbative and Non-Perturbative Quantum Field Theory”, 1st year course for the PhD in Physics, at the École Doctorale de Grenoble, France. With Prof. Mauro Papinutto.
20 hours
- 2009 Instructor of “Mécanique Analytique” (Analytical Mechanics), 1st semester “License 3”, of Prof. Frédéric Faure, at the Physics Department of the University Joseph Fourier of Grenoble, France.
15 hours
- 2005 Instructor of “Quantenmechanik II” (Advanced Quantum Mechanics), of Prof. J. J. van der Bij, at the Physics Department of the University of Freiburg, Germany.
30 hours

SUPERVISORY EXPERIENCE

- Supervisor of the Master thesis (Laurea Magistrale in Fisica) of **Simone De Feo**, University of Rome “La Sapienza”, Italy.
- 2023 Supervisor of the Bachelor thesis (Laurea Triennale in Fisica) of **Francesco Lozzi**, University of Rome “La Sapienza”, Italy.
- Supervisor of the Bachelor thesis (Laurea Triennale in Fisica) of **Andrea Sellese**, University of Rome “La Sapienza”, Italy. Defense: 28/06/2023.
- 2021-2024 Supervisor of the PhD thesis of **Federico Ripani**, University of Rome “La Sapienza”, Italy.
- Supervisor of the Master thesis (Laurea Magistrale in Fisica) of **Federico Coro**, University of Rome “La Sapienza”, Italy. Defense: 13/12/2021.
- 2020-2021 Supervisor of the Master thesis (Laurea Magistrale in Fisica) of **Federico Ripani**, University of Rome “La Sapienza”, Italy. Defense: 18/10/2021.
- 2019 Supervisor of the Master thesis (Laurea Magistrale in Fisica) of **Colomba Brancaccio**, University of Rome “La Sapienza”, Italy. Defense: 18/11/2019.
- 2019-2020 Supervisor of the Master thesis (Laurea Magistrale in Fisica) of **Federico Vitale**, University of Rome “La Sapienza”, Italy. Defense: 1/10/2020.
- 2016-2019 Supervisor of the PhD thesis of **Valerio Casconi**, *Perturbative Corrections in the Standard Model*, University of Rome “La Sapienza”, Italy. Defense: 7/02/2020.
- Supervisor of the Master thesis (Laurea Magistrale in Fisica) of **Matteo Capozzi**, University of Rome “La Sapienza”, Italy. Defense: 16/12/2016.
- 2016 Supervisor of the Master thesis (Laurea Magistrale in Fisica) of **Simone Lavacca**, University of Rome “La Sapienza”, Italy. Defense: 20/12/2016.
- Supervisor of the Bachelor thesis (Laurea Triennale in Matematica) of **Ilaria Monaco**, University of Rome “La Sapienza”, Italy. Defense: 26/10/2016.
- 2015-2018 Supervisor (with Marco Bochicchio) of the PhD thesis of **Matteo Becchetti**, *Phenomenological and Theoretical Aspects of QCD*, University of Rome “La Sapienza”, Italy. Defense: 12/02/2019.
- 2014-2015 Co-supervisor (Supervisor: A. Vicini) of the Master thesis (Laurea Magistrale) of **Roberto Mondini**, University of Milan, Italy. Defense: 16/04/2015.
- Co-supervisor (Supervisor: A. Vicini) of the Master thesis (Laurea Magistrale) of **Federico Buccioni**, University of Milan, Italy. Defense: 21/07/2015.
- 2013-2016 Supervisor (with Vittorio Del Duca) of the PhD thesis of **Francesco Moriello**, *Multiloop Scattering Amplitudes in the LHC Era*, University of Rome “La Sapienza”, Italy. Defense: 25/01/2017.
- 2010 Supervisor of the PhD thesis of **Zhao-ting Pan**, *NNLO mixed QCD-EW corrections to the Drell-Yan production of Z and W bosons*, University of Grenoble 1, UJF, Grenoble, France. Defense: 25/10/2013.
- 2009 Co-supervisor of the PhD thesis of **T. Ježo**, *New resonances at the LHC*. Supervisors: Prof. M. Klasen and Dr. I. Schienbein, University of Grenoble 1, UJF, Grenoble, France. Defense: 25/09/2013.

2005 Co-supervisor (with Andrea Ferroglia) of the degree thesis of **C. Kurz**, *Two-Loop QCD Corrections to Production and Decays of Higgs Bosons*. Supervisor: Prof. J. J. van der Bij, University of Freiburg, Germany.

FUNDED RESEARCH PROJECTS

- Title *Theory and Phenomenology of the Fundamental Interactions*, Fondi di Ateneo, La Sapienza. 2020. Coordinator: Prof. M. Papinutto.
- PRIN 2017. Financial Entity: Ministero della Università e della Ricerca, Codice 20172LNEEZ. PI: Prof. Paolo Gambino.
- Title: *Unraveling new physics at the LHC through the precision frontier*. COST Action: OC-2016-2 CA16201. MC member for Italy.
- Title acronime: *HiPPiE@LHC*. Project N. 746159. Horizon 2020, Marie Skłodowska-Curie Actions-IF-2016. 24 months. Fellow: Dr. M. Bonvini. Supervisor: Dr. R. Bonciani.
- **as PI** Title *Theory and Phenomenology of the Fundamental Interactions*, Fondi di Ateneo, La Sapienza. 2015. Coordinator: Dr. R. Bonciani.
- Title *Theory and Phenomenology of the Fundamental Interactions*, Fondi di Ateneo, La Sapienza. 2013. Coordinator: Prof. A. Polosa.
- Title: *Calcolatore parallelo per calcolo scientifico*, Acquisizione di Medie e Grandi Attrezzature Scientifiche, La Sapienza. 2013. Coordinator: Prof. C. M. Casciola.
- **as PI** Title acronime: *TOPPhysics*. Project N. 302997. Marie Curie FP7-PEOPLE-2011-IEF. 24 months. Fellow: Dr. R. Bonciani. Supervisor: Dr. S. Catani.
- **as PI** Title: *Precise predictions for top observables at hadron colliders*. Financial Entity: CNRS/IN2P3. 2012. PI: Dr. R. Bonciani. Inside the project *Théorie LHC France*.
- **as PI** Title: *Mixed QCD-Electroweak corrections at NNLO for the production and decay of Z and W bosons at hadron colliders*. Financial Entity: CNRS/IN2P3. 2012. PI: Dr. R. Bonciani. Inside the project *Théorie LHC France*.
- Title: *Simmetrie, masse e misteri: rottura della simmetria elettrodebole, mescolamento dei sapori, violazione di CP e materia oscura nell'era di LHC*. Financial Entity: Ministero della Università e della Ricerca, PRIN 2010-2011, Codice 2010YJ2NYW. PI: Prof. G. Martinelli (Local Coordinator: Dr. R. Contino).
- Title *Theory and Phenomenology of the Fundamental Interactions*, Fondi di Ateneo, La Sapienza. 2012. Coordinator: Dr. R. Contino.
- **as PI** Title: *Precise predictions for t-tbar observables at hadron colliders* Financial Entity: CNRS/IN2P3. 2011. PI: Dr. R. Bonciani.
- Title: *Théorie LHC France*. Financial Entity: CNRS/IN2P3. 2010. Coordinator: Prof. M. Klasen.
- Title: *QCD and hard processes at high-energy hadron colliders*. Financial Entity: Acciones Complementarias de Colaboración INFN (MEC) 01.07.2006 – 30.06.2007, 01.09.2007 – 31.08.2008. PI: Dr. G. Rodrigo and Prof. S. Catani.

- Title: *Precision tests of the Standard Model and beyond at the LHC*. Financial Entity: Acciones Complementarias de Colaboración INFN (MEC) 01.07.2006 – 30.06.2007. PI: Dr. G. Rodrigo and Dr. A. Vicini.
- **as PI** Title: *Precise predictions for heavy-flavour production at LHC*. Financial Entity: CSIC (Proyecto I3P). 01.09.2007 – 31.08.2010. PI: Dr. R. Bonciani.
- Title: *FPA2004-00996: Partículas Elementales: Física de Color y Sabor (PARSIFAL)*. Financial Entity: Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica (Ministerio de Educación y Ciencia). 13.12.2004 – 12.12.2007. PI: Prof. A. Pich.
- Title: *CERN-LHC-ATLAS; Untersuchung von Proton-Proton-Wechselwirkungen im ATLAS-Experiment am Large Hadron Collider-Bau des Silizium-Streifendetektors*. Financial Entity: DFG, Forschungsvorhaben: BMBF, 03.03.2004, 05 HA 4VF1/5. 2004 – 2005. PI: Prof. K. Jakobs and Prof. J. J. van der Bij.
- **as PI** Title: *Development of new methods for the calculation of Feynman Diagrams*. Financial Entity: Fondazione A. Della Riccia, Firenze, Italy. 01.01.2001 – 30.04.2002. PI: Dr. R. Bonciani.
- **as PI** Title: *Correzioni Radiative a due loops nel Modello Standard*. Financial Entity: Progetto Marco Polo, ALMA UE, Università degli Studi di Bologna. 15.01.2002 – 15.06.2002. PI: Dr. R. Bonciani.
- **as PI** Title: *Sviluppo di nuovi metodi per il calcolo di diagrammi di Feynman*. Financial Entity: Progetto Giovani Ricercatori, Università degli Studi di Bologna. 1.03.1999 – 30.01.2002. PI: Dr. R. Bonciani.

RESEARCH GROUPS

- 2023. Responsible/coordinator of the Roma node of INFN research project (Iniziativa Specifica) “AMPLITUDES”.
- 2017-2022. Member of the Roma node of INFN research project (Iniziativa Specifica) “ENP”.
- 2015-2018. Coordinator of the research group for the project “Theory and Phenomenology of the Fundamental Interactions”, La Sapienza.
- 2016-2017. Scientific responsible for the post doc position (assegno di ricerca) of Dr. Marco Bonvini.
- 2013-2015. Scientific responsible for the post doc position (assegno di ricerca) of Dr. Leandro Cieri.
- 2012-2016. Member of the Roma node of INFN research project (Iniziativa Specifica) “QNP”.
- 1996-1997. Member of the Firenze node of INFN research project (Iniziativa Specifica) “PR21”.

INSTITUTIONAL and ORGANIZATIONAL ACTIVITIES

- Since 2018. Responsible for the Master in Physics (Laurea Magistrale in Fisica, LM17) of the CGAQ Committee (Commissione di Gestione dell’Assicurazione della Qualità) of the Department of Physics of the University of Rome “La Sapienza”.
Study and drafting of the following documents for LM17: RRC (riesame ciclico) 2018, SMA (scheda di monitoraggio annuale) 2018, 2019, 2020, 2021, 2022. Accreditemento 2019. RCC (riesame ciclico) 2023.
- 2024. Member of the “Programme Committee” of the conference “Loops and Legs in Quantum Field Theory 2024”, Wittenberg, Germany.

- 2022. Member of the “Programme Committee” of the conference “Loops and Legs in Quantum Field Theory 2022”, Ettal, Germany.
- 2021 August-September. Member of the Committee for the PhD selection: “Dottorato in Fisica XXXVII Ciclo”, Department of Physics of the University of Rome “La Sapienza”.
- 2019-2020. Member of the local Organizing Committee of the Conference “SM@LHC 2020”, then postponed for COVID-19 emergency.
- 2015. Member of the local Scientific Board of the Conference “Top 2015”, September 2015, Ischia, Italy.
- 2015. Member of the organizing committee of the *Atrani School of Analytic Computing in Theoretical High-Energy Physics*, October 2015, Atrani, Italy.
- 2015. Member of the organizing committee of the workshop *Top mass: challenges in definition and determination.*, Laboratori Nazionali di Frascati, Frascati, Italy. May 6-8, 2015.
- 2014-2015. Support for the Lectures of the “Cattedra Fermi”, Department of Physics of the University of Rome “La Sapienza”.
- 2012-2019 organizer of the seminars of the High-Energy Theory Group at the Department of Physics of the University of Rome “La Sapienza”.

UNIVERSITY ORIENTATION

Within “Porte Aperte alla Sapienza – Le giornate di orientamento”, presentation of the the research group of “Theoretical High-Energy Physics” for the orientation of the Master in Physics at La Sapienza.

- Presentation: *La ricerca della teoria fondamentale dell’Universo: Fisica Teorica delle Alte Energie in Sapienza*, July 17, 2018.
- Presentation: *Theoretical High-Energy Physics in Sapienza*, September 30, 2019.

PROFESSIONAL ACTIVITIES

- Referee for the following Journals: Phys. Rev. Lett., JHEP, Nuclear Physics B, EPJC and CPC.
- Since 2017, external Referee for F.R.S.-FNRS, the Belgian national fund for scientific research.
- Referee for 5 PhD thesis works, in La Sapienza, Padova University and University Joseph Fourier in Grenoble, France. Referee for many Master and Bachelor theses in La Sapienza.

COMPUTER SKILLS

UNIX-LINUX. Fortran. Basics of C++. FORM, Mathematica.

FOREIGN LANGUAGES

Italiano (mother language), English, Français, Deutsch (Basic).

INTERNATIONAL CONFERENCES

- **XXIII School of Theoretical Physics, Recent Developments in Theory of Fundamental Interactions**, Ustroń, Poland, September, 1999. Title of the seminar: *Differential Equations for the Calculation of Multi-Point Feynman Functions*.

- **Convegno Informale di Fisica Teorica**, Cortona (Arezzo), Italy. June 2002. Title of the seminar: *Master Integrals for the Two-Loop Sudakov Electroweak Form Factors*.
- **QCD04 11th International QCD Conference**, Montpellier, France. July 2004. Title of the seminar: *Two-Loop QCD Corrections to the Heavy-Quark Form Factors*.
- **Final Meeting of the Network “Physics at Colliders”**, Montpellier, France, September 2004. Title of the seminar: *Analytical Calculation of Two-Loop Feynman Diagrams: Laporta Algorithm, Differential Equations Method and some Applications*.
- **Mini-workshop on Bhabha Scattering**, Institut für Theoretische Teilchen Physik Universität Karlsruhe, Germany. Title of the seminar: *Order α^4 QED Contributions to the Bhabha Scattering Cross-Section*. April 2005.
- **HEP2005 Europhysics Conference**, Lisbon, Portugal. July 2005. Title of the seminar: *Heavy-Quark Form Factors at $\mathcal{O}(\alpha_S^2)$* .
- **RADCOR 2005, 7th International Symposium on Radiative Corrections**, Shonan Village, Japan. October 2005. Title of the seminar: *Two-Loop Bhabha Scattering in QED*.
- **Loops and Legs in Quantum Field Theory**, Eisenach, Germany. April 2006. Title of the seminar: *Two-parton contribution to the heavy-quark Forward-Backward Asymmetry in NNLO QCD*.
- **Rencontres de Physique des Particules 2007**, LPSC Grenoble, France. February 2007. Title of the seminar: *Analytical calculation of massive Feynman diagrams and the NLO corrections to $H \rightarrow \gamma\gamma$ and $gg \rightarrow H$* .
- **HEP2007 Europhysics Conference**, Manchester, England. July 2007.
Mini-Review Talk: *Electroweak Corrections to Higgs Production and Decay*.
- **RADCOR 2007, 8th International Symposium on Radiative Corrections**, Florence, Italy. October 2007. Title of the seminar: *Analytical calculation of massive Feynman diagrams and the NLO corrections to $gg \rightarrow H$ and $H \rightarrow \gamma\gamma$* .
- **RadioMonteCarLow workshop**, Laboratori Nazionali INFN, Frascati, Italy. April 2008. Title of the seminar: *NNLO Corrections to Bhabha Scattering*.
- **Loops and Legs in Quantum Field Theory**, Sondershausen, Germany. April 2008. Title of the seminar: *Two-Loop Heavy-Flavor Contribution to Bhabha Scattering*.
- **Theory-LHC France**, LPSC Grenoble, September 2009. Title of the seminar: *Top Anti-Top Production at NNLO in QCD*.
- **GDR Terascale workshop**, University of Heidelberg, Germany. October 2009. Title of the seminar: *$t\bar{t}$ Production at Hadron Colliders*.
- **Journées de Physique Théorique**, CPT Grenoble, France. November 2009. Title of the seminar: *Collider physics and Precision Calculations*.
- **Theory-LHC France**, IPN Lyon, France, April 2010. Title of the seminar: *Top Anti-Top Production at the LHC*.
- **ICHEP**, Paris, France, July 2010. Title of the seminar: *Top Anti-Top Production at Hadron Colliders*.

- **HP2**, Galileo Galilei Institute, Firenze, Italy, September 2010. Title of the seminar: *Top Anti-Top Production at Hadron Colliders*.
- **Rencontres de Physique des Particules 2011**, LPC Clermont-Ferrand, France. Jan. 2011. Title: *Two-Loop QCD Corrections to $t\bar{t}$ Production at Hadron Colliders*.
- **HEP2011 Europhysics Conference**, Grenoble, France. July 2011.
Mini-Review Talk: *Top Production at Hadron Colliders*.
Title of the second seminar: *Two-Loop Mixed QCD-EW Virtual Corrections to the Drell-Yan Production of Z and W Bosons*.
- **Loops and Legs in Quantum Field Theory**, Weimar, Germany. April 2015.
- **ICHEP**, Valencia, Spain. July 2015.
- **LFC17** “Old and New Strong Interactions from LHC to Future Colliders”, ETC* Trento, Italy. September 2017. Title of the seminar: *$t\bar{t}$ Production at Hadron Colliders*.
- **KMPB Conference** “Elliptic Integrals, Elliptic Functions and Modular Forms in Quantum Field Theory”, DESY Zeuthen, Germany. October 2017. Title of the seminar: *Elliptic Integrals and the Two-Loop $t\bar{t}$ Production in QCD*.
- **LHCP2019**, Puebla, Mexico. May 2019.
Plenary Talk: *State-of-the-Art Calculations for Top, Higgs and jet production*.
- **A Loop Summit** “New perturbative results and methods in precision Physics: Quantum Field Theory, Collider Physics and Gravity”, Cadenabbia, Italy. July 2021.
Title of the seminar: *Mixed QCD-EW Corrections to Drell-Yan Processes*.
- Invited talks in the Universities: Freiburg (2002, 2005, 2011), Aachen (2003), Milano (2003, 2006), Firenze (2005, 2017), Karlsruhe (2005), Zürich (2006), Valencia (2005), Grenoble (2007), PSI-Zürich (2007), IFIC-Valencia (2007), LAPTH of Annecy (2007), LPTHE of Paris V-VII (2008), Strasbourg (2010), New York City College of Technology (2010), Roma 1 (2011, 2014, 2017), Torino (2011, 2019), Madrid Autonoma (2011), Laboratori Nazionali di Frascati (2016), ETH Zürich (2017), DESY Zeuthen (2017), Milano Bicocca (2018), MPI Munich (2019), Padova (2022).

WORKSHOPS

- **Mini-workshop on Bhabha Scattering**, Institut für Theoretische Teilchen Physik Universität Karlsruhe, Germany. April 2005.
- **Advancing Collider Physics: from Twistors to Monte Carlos**, Galileo Galilei Institute for Theoretical Physics, Florence, Italy. August, 27 to October, 26, 2007.
- **RadioMonteCarLow workshop**, Laboratori Nazionali INFN, Frascati, Italy. April 2008.
- **Workshop on Higgs Boson Phenomenology**, ETH and Univ. of Zürich, Switzerland. Jan. 2009.
- **GDR Terascale**, LPSC, Grenoble, France. March 2009.
- **Theory-LHC France workshop**, LPSC Grenoble, September 2009.
- **GDR Terascale**, University of Heidelberg, Germany. October 2009.
- **Theory-LHC France workshop**, IPN Lyon, Francia, Aprile 2009.
- **HP2**, Galileo Galilei Institute, Firenze, Italy, September 2010.

- **Heavy Particles at the LHC**, Pauli Center for Theoretical Studies, ETH Zürich, Switzerland. January 2011.
- **HP2**, Galileo Galilei Institute, Firenze, Italy, September 2014.
- **Workshop on Prospects and Precision at the Large Hadron Collider at 14 TeV**, Galileo Galilei Institute for Theoretical Physics, Florence, Italy. September, 1 to October, 24, 2014.
- **Top Mass: challenges in definition and determination**, Laboratori Nazionali di Frascati, Frascati, Italy. May 6-8, 2015.
- **Autumn Institute: Challenges in Collider Physics**, Laboratori Nazionali di Frascati, Frascati, Italy. November 2016. Title: *Planar two-loop corrections to $H + j$ production in QCD*.
- **Workshop on The elliptic/missing Feynman integrals**, ETH Zürich, Switzerland. June 2017. Title: *Two-Loop Matrix Elements and Elliptic Integrals*.

RESEARCH ACTIVITY in SUMMARY

My research activity regards the phenomenology of the Standard Model (in particular QCD), and its extensions, at hadron and lepton colliders. I am involved in several collaborations working on the study of radiative corrections, at the level of next-to-leading (NLO) and next-to-next-to-leading order (NNLO) in perturbative quantum field theory, for observables that are important for the physics at the Large Hadron proton-proton Collider (LHC) of CERN and at future international linear or circular lepton colliders.

For what concerns lepton colliders, I studied the NNLO QED corrections to the Bhabha scattering cross section, important for the determination of the luminosity of the collider, and the NNLO QCD corrections to the production cross section of heavy quarks, important for observables as the forward-backward asymmetry, that enters the evaluation of the weak mixing angle.

For what concerns hadron colliders, I focused on Higgs and heavy-quark (top) physics. I calculated the NLO (two loops) electroweak corrections due to the light quarks to the Higgs production cross section in gluon fusion, and to the Higgs decay width in the $\gamma\gamma$ channel. I calculated the NLO (two loops) QCD corrections to the production cross section of a scalar Higgs in gluon fusion, within the SM (confirming after 10 years the famous result by Spira-Djouadi-Graudenz-Zerwas) and in models in which fermion and scalar massive colored particles are present. Moreover, I studied the resummation of soft-gluon effects at the NLL accuracy level, for the total cross section of production of heavy-quark pairs in hadronic collisions. I calculated the two-loop corrections to the semileptonic heavy-to-light transition (semileptonic B decay), important for the evaluation of the V_{ub} CKM matrix element.

Recently, I focused on the evaluation of the mixed NNLO QCD-electroweak corrections to the NC and CC Drell-Yan production processes, of particular importance for a precise determination of the W mass. Moreover, I am working at the evaluation of the NLO corrections (two loops) to the production of $H + j$ (or decay of H in three partons).

List of PUBLICATIONS

56 peer reviewed articles published on the best journals of the field (Physical Review Letters, JHEP, Nuclear Physics B, Physical Review, Physics Letters B, etc) and 17 conference proceedings, collecting a total of more than **5000 citations** and **h-index 39** (data from INSPIRE); many well know papers.

For the complete list of publications see the “INSPIRE” web page:

<http://inspirehep.net/search?ln=en&p=f+a+bonciani>