

# lucarottoli

curriculum vitæ

## Personal information

name	Luca Rottoli
citizenship	Italian
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## Employment history

June 2024–Present	<b>Assistant Professor (RTDb `senior')</b>	University of Milan-Bicocca
Jan 2022–May 2024	<b>SNF Ambizione Fellow - Junior Principal Investigator</b>	University of Zürich
Sept 2020–Dec 2021	<b>Postdoctoral researcher</b> (group Prof. Dr. Grazzini)	University of Zürich
Oct 2019–Aug 2020	<b>Affiliate postdoctoral researcher</b> (host: Dr. C.W. Bauer) National Laboratory & UC Berkeley	Lawrence Berkeley
Sep 2018–Aug 2020	<b>Postdoctoral researcher</b> (group Prof. Alioli)	University of Milan-Bicocca

## Education

2014-2018	<b>DPhil</b> in Theoretical Physics <i>Supervisor: Dr. J. Rojo</i> <i>Precision QCD at the LHC: from the structure of the proton to all-order resummations</i>	University of Oxford
2011–2014	<b>Master of Science</b> in Physics, Major in Theoretical Physics <i>Supervisors: Prof. S. Forte, Prof. G. Ridolfi</i> <i>Threshold resummation in SCET vs. direct QCD: a systematic comparison</i> <i>Grade: 110/110 cum laude</i>	University of Milan
2008–2011	<b>Bachelor of Science</b> in Physics <i>Supervisors: Prof. S. Forte, Prof. A. Vicini, Dr. J. Rojo</i> <i>The Weinberg angle from the lepton Forward-Backward Asymmetry at the LHC</i> <i>Grade: 110/110 cum laude</i>	University of Milan

## Further education

14-20 Aug 2016	<b>PSI Summer School `Exothiggs'</b>	Zuoz
11-29 Jan 2016	<b>GGI lectures on the theory of fundamental interactions</b>	GGI, Florence
07-17 Jul 2015	<b>CTEQ School on QCD and EW Phenomenology</b>	University of Pittsburgh
25-30 May 2015	<b>Higgs Centre School of Theoretical Physics</b>	Edinburgh

## Institutional responsibilities

2022	<b>Theoretical Particle Physics Seminars Organiser</b>	University of Zürich & ETH
2021	<b>Theoretical Particle Physics Journal Club Organiser</b>	University of Zürich
2017-2018	<b>Member of the Oxford Theory Computer Commitee</b>	University of Oxford

## Teaching experience

I am **co-author** of a book for undergraduate students on Quantum Mechanics (Stefano Forte and Luca Rottoli, *Fisica Quantistica*; Zanichelli, ISBN 978-88-08-62055-2).

2024	<b>Lecturer</b> for 'Quantum Mechanics'	Department of Mathematics, Milan Bicocca U.
2020-2021	<b>Teaching Assistant</b> for 'PHY331 Quantum Mechanics I'	University of Zürich
23 Aug- 4 Sep 2021	<b>Discussion Leader</b> for the 2021 CERN-Fermilab school	CERN
2021	<b>Teaching Assistant</b> for 'PHY391 Proseminar Theoretische Physik'	University of Zürich
2017-2018	<b>Tutor and Teaching Assistant</b> for 'Advanced Quantum Field Theory', Oxford Master Course in Mathematical and Theoretical Physics	Oxford Physics Department
2015-2018	<b>Tutor</b> for 'Theoretical Physics', Master of Physics Theory Option C6 (4th year)	Oxford Physics Department
2016-2017	<b>Tutor and Teaching Assistant</b> for 'Standard Model', Oxford Master Course in Mathematical and Theoretical Physics	Oxford Physics Department
2016	<b>Retained Lecturer</b> (1st year Physics)	Wadham College, Oxford
2015	<b>Tutor</b> for 'Subatomic Physics' (3rd year)	Exeter College, Oxford

## Supervision and mentoring of junior researchers

2021	<b>Supervision</b> of Bachelor Thesis of Giovanni Parri: <i>Parton Shower in an electron-positron collision</i> (University of Zürich)
2020-2021	<b>Supervision</b> of Master Thesis of Mark N. Costantini: <i><math>q_T</math> subtraction for jets: a study of Higgs plus jet at NLO</i> (University of Zürich)
2020-present	<b>Mentoring and co-supervision</b> of Jürg Haag, Chiara Savoini and Flavio Guadagni (graduate students, University of Zürich)
2016-2019	<b>Mentoring</b> of Emma Slade (graduate student, University of Oxford)

## Other academic activities

### Refereeing activities:

I am a referee for the following *national science funding agencies*: National Science Centre (Poland).

I am a referee for the following *academic journals*: PRL, JHEP, EPJC, PRD, Scipost, PLB, EPJ Plus, MPL A.

I have been a referee for the following *PhD theses*: Roy Stegeman (University of Milan, 2022).

### Membership in panels, working groups, etc:

Member of the Drell-Yan Physics and EW Precision Measurements WG and of the Charm Production at Forward Physics Facilities WG (CERN)

### Membership in scientific collaborations:

Former member of the NNPDF collaboration and of the GENEVA collaboration. Current member of the MATRIX and of the RadISH collaborations. CERN User since 2017 with frequent visits and active collaborations.

## Participation at conferences, workshops, and short-term visits

Selected conferences and workshops

10-13 Sep 2024 **HP2**

Turin

29-30 May 2024	<b>Non-Perturbative and Topological Aspects of QCD</b>	CERN
20- 24 Nov 2023	<b>MPI@LHC2023</b>	Manchester, UK
6- 8 Jun 2023	<b>Parton Showers and Resummation 2023</b>	Milan, Italy
5 - 11 Mar 2023	<b>Rencontres de Physique de la Vallée d'Aoste</b>	La Thuile, Italy
31 Oct-4 Nov 2022	<b>Workshop on Tools for High Precision LHC Simulations</b>	Ringberg Castle, Germany
08-19 Aug 2022	<b>Gearing up for High-Precision LHC Physics</b>	MIAPbP workshop, Munich, Germany
11-14 Apr 2022	<b>SM@LHC 2022</b>	CERN
19-26 Mar 2022	<b>Rencontres de Moriond 2022</b>	La Thuile, Italy
17-22 Oct 2021	<b>Rencontres de Blois</b>	Blois, France
27-30 Aug 2019	<b>NNPDF Collaboration &amp; N3PDF Meeting</b>	Varenna, Italy
26-30 Nov 2018	<b>Higgs Couplings 2018</b>	Tokyo, Japan
27-31 Aug 2018	<b>QCD@LHC 2018</b>	Dresden, Germany
17-24 Mar 2018	<b>Rencontres de Moriond 2018</b>	La Thuile, Italy
12-16 June 2017	<b>LHC and the Standard Model: Physics and Tools (CERN TH institute)</b>	CERN, Switzerland
5-14 June 2017	<b>Les Houches PhysTev 2017</b>	Les Houches, France

## Oral contributions to conferences

### Selected Talks

29 May 2024	<b>Multi-parton interactions at hadron colliders</b> Invited talk at the Non-Perturbative and Topological Aspects of QCD Workshop	CERN
21 Nov 2023	<b>Hadron production at the LHC: predictions for long-lived particles at forward facilities</b> Manchester Invited talk at MPI@LHC 2023	University of
8 June 2023	<b>A new observable for <math>m_W</math> determination at the LHC</b> Invited talk at Parton Showers and Resummation 2023	University of Milan Bicocca
9 Mar 2023	<b>Standard Model predictions for the <math>W</math> boson mass</b> Invited plenary talk at Rencontres de Physique de la Vallée d'Aoste	La Thuile, Italy
3 Nov 2022	<b>Power corrections for jet processes</b> Invited talk at Workshop on Tools for High Precision LHC Simulations	Ringberg Castle, Germany

16 Aug 2022	<b>Power Corrections in transverse observables</b> Invited talk at Gearing up for High-Precision LHC Physics, MIAPbP workshop	Munich, Germany
13 Apr 2022	<b>Linear power corrections and small <math>q_T</math> resummation</b> Invited plenary talk at SM@LHC 2022	CERN
24 Mar 2022	<b>The Drell-Yan fiducial cross section at <math>N^3\text{LO}+N^3\text{LL}</math></b> Rencontres de Moriond 2022	La Thuille, Italy
19 Oct 2021	<b>Transverse observables in Higgs and Drell-Yan production at <math>N^3\text{LL}+\text{NNLO}</math></b> Rencontres de Blois 2021	Blois, France
29 May 2020	<b>Multi-differential Higgs theory predictions: vetos and double-differential resummation</b> Invited talk at LHCP 2020	remote talk
29 Nov 2018	<b>Constraints on Higgs couplings from double-Higgs production at future hadron colliders</b> Higgs Couplings 2018	Tokyo, Japan
31 Aug 2018	<b>Recent developments in resummation</b> Invited plenary talk at QCD@LHC 2018	Dresden, Germany
22 Mar 2018	<b>Higgs and Drell-Yan transverse observables at <math>N^3\text{LL}+\text{NNLO}</math></b> Invited plenary talk at Rencontres de Moriond 2018	La Thuille, Italy
16 Jun 2017	<b>Resummation in PDF fits</b> LHC and the Standard Model: Physics and Tools (CERN TH institute)	CERN, Switzerland
9 Jun 2017	<b>The Higgs transverse momentum</b> Invited talk at Les Houches PhysTev 2017	Les Houches, France
6 Apr 2017	<b>Towards small-x phenomenology</b> Invited talk at DIS 2017	University of Birmingham, UK
14 Apr 2016	<b>The atmospheric prompt neutrino flux revisited</b> DIS 2016	DESY Hamburg, Germany
3 Sep 2015	<b>NNPDF Status and Future Plans</b> Invited talk at QCD@LHC 2015	Queen Mary University of London, UK

## Seminars

26 Mar 2024	<b>Matching NNLO calculation to parton showers at hadron colliders</b> Theoretical Particle Physics Seminars	ETH
21 Sep 2023	<b><math>p_T^W, p_T^Z</math> measurement in ATLAS</b> Collider Cross Talk Series	CERN
24 Mar 2023	<b>Determination of the <math>W</math> boson mass at hadron colliders</b> Particle Physics Seminars	University of Manchester
23 Mar 2023	<b>Associated production of a <math>W</math> boson and massive <math>b</math> quarks in NNLO QCD</b> Particle Physics Journal Clubs	University of Manchester
16 Feb 2023	<b><math>m_W</math> determination at hadron colliders</b> LAPTh Seminars	LAPTh, Annecy
13 Dec 2022	<b>Theory uncertainties affecting <math>m_W</math> measurements</b> Topical Seminar on Subnuclear Physics	Università Roma III
9 Mar 2022	<b>Non-local subtractions for collider processes</b> Particle Physics Theory Seminar	University of Edinburgh
24 Feb 2022	<b>Non-local subtractions for jet processes</b> Theory Seminar	Nikhef

28 Jan 2022	<b>Exploring jet observables at the LHC</b> QCD Seminar	CERN
26 Mar 2021	<b>Resummation of transverse observables with RadISH</b> Theory Seminar	MPI Munich
28 Jan 2021	<b>Higgs transverse momentum with a jet veto: a double-differential resummation</b> High energy physics Seminar	Michigan State University
21 Jan 2021	<b>Resummation of transverse observables in direct space</b> HEP Phenomenology Seminar	University of Cambridge
1 Jun 2020	<b>Higgs transverse momentum with a jet veto: a double-differential resummation</b> Remote 4D Seminar	UC Berkeley & LBNL
21 Apr 2020	<b>Colour-singlet transverse momentum with a jet veto: a double-differential resummation</b> Joint INFN-UNIMI-UNIMIB Pheno Seminars	Milan
2 Mar 2020	<b>Joint Higgs and jet transverse-momentum resummation at the LHC</b> Nuclear and Particle Theory Seminar	MIT, USA
9 May 2019	<b>The transverse momentum spectrum of EW bosons</b> Dalitz seminars in fundamental physics	University of Oxford, UK
27 Jun 2018	<b>Transverse observable resummation at the LHC</b>	University of Rome La Sapienza, Italy
22 Nov 2017	<b>Resummation in PDF fits</b> High Energy Physics Colloquia	University of Cagliari, Italy

## Awards, grants and scholarships

Aug 2021	<b>Ambizione Fellowship (4 year grant, CHF 530'000)</b> Foundation	Swiss National Science
Nov 2019	<b>Physics Young Talent Award, 2nd prize</b> Nazionale dei Lincei	University of Milan-Bicocca and Accademia
May 2018	<b>Oxford Blue Sport Award</b> (water polo)	University of Oxford
2018	<b>QCD Travel Grant</b>	Moriond 2018
2014-2018	<b>DPhil studentship</b>	University of Oxford
2008-2010	<b>Undergraduate studentship</b> (top of the year)	University of Milan

## Outreach activities

16 Ott 2022	<b>Collaboration with the magazine 'La Lettura', rubrica 'Il podio'</b> Corriere della Sera	
2021	<b>Editing and responsibility of the cover of the Annual Report of the Physics Department</b>	University of Zürich, Switzerland
25-26 Nov 2021	<b>Poster presentation for UZH Open Day</b>	University of Zürich, Switzerland
Nov 2020	<b>Video presentation for (remote) UZH Open Day</b>	University of Zürich, Switzerland
2015-2018	<b>Saturday Mornings of Theoretical Physics</b>	University of Oxford, UK

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