

Filippo Maria Balli

Curriculum Vitae et Studiorum

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Affiliation

Ph.D. Student, Physics and Nanosciences School of Graduate Studies

Department of Physics, Informatics and Mathematics

Università degli Studi di Modena e Reggio Emilia *UNIMORE*

Via Campi 213/A, Modena, Italy

INFN (Istituto Nazionale di Fisica Nucleare) - Sezione di Bologna

Via Irnerio 46, Bologna, Italy

Education

Sept. 2021–
July 2022 **Visiting Ph.D. Student with Fellowship - Department of Physics and Astronomy, Uppsala University**

Supervisor: Prof. Oliver Schlotterer

2019–Present **Ph.D. Student with National Grant - Physics and Nanosciences School of Graduate Studies, Università degli Studi di Modena e Reggio Emilia UNIMORE**

Major: Theoretical Particle Physics

Title of the Project: "Soft Graviton Theorems from the Worldline Formalism"

Supervisor: Prof. Olindo Corradini

2016–2018 **Laurea Magistrale Degree (MSc) in Physics - International Course, Università degli Studi di Modena e Reggio Emilia UNIMORE, 110/110 cum laude**

Major: Theoretical Particle Physics

Thesis: "Worldline Computation of Tree-Level QED and QCD Amplitudes and Transversality". Supervisor: Prof. Olindo Corradini

Weighted GPA: 29.846/30

2013–2016 **Laurea Degree (BSc) in Physics, Università degli Studi di Modena e Reggio Emilia, 110/110 cum laude**

Thesis: "Quantum Walk of Interacting Fermions in Presence of Different Kinds of Classical Noise" (in Italian). Supervisor: Prof. Paolo Bordone.

Field of Study: Theoretical and Computational Quantum Mechanics.

Weighted GPA: 29.222/30

2009–2013 **High School Diploma, Liceo Classico "Rinaldo Corso", Correggio, 98/100**

Scientific Projects, Schools and Conferences

September
2019 Workshop (two days) on *Avenues of Quantum Field Theory in Curved Spacetime*, held at **Università degli Studi di Modena e Reggio Emilia UNIMORE** (official website at <https://agenda.infn.it/event/19413/overview>)

- December 2020 *LACES (Advanced Lectures on Fields and Strings)*: school (three weeks) held online at **Galileo Galilei Institute (GGI), Florence** (official website at <https://www.ggi.infn.it/laces/LACES20/index20.html>)
- August 2022 *Amplitudes 2022 Summer School* (one week) held at **Charles University, Prague** (official website at <https://indico.cern.ch/event/1130654/>)
- August 2022 *Amplitudes 2022* (one week) held at **Charles University, Prague** (official website at <https://indico.cern.ch/event/1101193/>)
- September 2022 Seminar: "Manifest colour-kinematics duality and double-copy in the string-based formalism" at *Avenues of Quantum Field Theory in Curved Spacetime*, **University of Genova, Genova** (official website at <http://avenuesingenova.dime.unige.it/#>)

Publications

- [1] N. Ahmadinia, F. M. Balli, O. Corradini, J. M. Dávila, and C. Schubert, "Compton-like scattering of a scalar particle with n photons and one graviton," *Nuclear Physics B*, vol. 950, p. 114877, 2020.
- [2] N. Ahmadinia, F. M. Balli, C. Lopez-Arcos, A. Q. Velez, and C. Schubert, "Color-kinematics duality from the Bern-Kosower formalism," *Phys. Rev. D*, vol. 104, no. 4, p. L041702, 2021.
- [3] N. Ahmadinia, F. M. Balli, O. Corradini, C. Lopez-Arcos, A. Q. Velez, and C. Schubert, "Manifest colour-kinematics duality and double-copy in the string-based formalism," *Nucl. Phys. B*, vol. 975, p. 115690, 2022.

Teaching Experience

- 2018-2021 Exercise sessions for the Laurea course "*Metodi Matematici per la Fisica*" (*Mathematical Methods for Physics*) - Department of Physics, Mathematics and Informatics, *Università degli Studi di Modena e Reggio Emilia*.

Awards

- 2016 Fellowship "Top Student" (partial refund of University fees)
- 2018 Fellowship "Premio di Laurea" granted by the University of Modena and Reggio Emilia
- 2021 Fellowship "Mobilità Giovani Ricercatori 2021" granted by the University of Modena and Reggio Emilia for a six-months visiting period at **Uppsala University** under the supervision of Prof. Oliver Schlotterer

Computational Skills

- Operating Systems: MacOS, Windows
- Programming Languages: Wolfram Mathematica, Matlab, Fortran, Bash

Markup LaTeX
Languages
Software Quantum ESPRESSO
Suits

Language Skills

Italian, Mother Language

English, Full Working Proficiency