

Claudia Rella

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EDUCATION

- Master of Science in Mathematical and Theoretical Physics** – Distinction Oct 2018 – Jul 2019
Mathematical Institute and Department of Physics, St John's College, University of Oxford, UK
Thesis: *Motivic Amplitudes* supervised by Prof. Francis Brown.
- Bachelor of Science in Physics** – Summa cum Laude Sep 2015 – Jul 2018
Department of Physics, University of Rome La Sapienza, Italy
Thesis: *Photonic Bloch Waves* supervised by Prof. Fabio Sciarrino.

RESEARCH EXPERIENCE AND INTERNSHIPS

- Master Class in Mathematical Physics** Sep 2019 – present
Department of Mathematics, University of Geneva, Switzerland
Research projects (up to Jan 2020): Collaborating with Prof. Francis Brown, University of Oxford, on a research project in the field of Motivic Amplitudes. Collaborating with Prof. Francesco Riva, University of Geneva, on a research project in the field of Effective Field Theories.
- Software Engineering Internship** 2019, Jul
Pangea Formazione, Rome, Italy
Specific contributions: Contributed to Deep Learning predictive model for preventative maintenance of large infrastructures equipped with alarm nets. Project implemented using Bayesian Neural Networks and programming language R.
- Research Internship** 2017, Sep – Nov
LNF (National Laboratories of Frascati), INFN (National Institute of Nuclear Physics), Italy
Specific contributions: Contributed to Monte Carlo optical simulation of the SAC (Small-Angle Calorimeter) using software Geant4 and programming language C++. Characterised performance of PbF2 crystal attached to Hamamatsu R13478UV photomultiplier tube. Part of the experimental project PADME (Positron Annihilation into Dark Matter Experiment).

PUBLICATIONS

- Characterization and Performance of PADME's Cherenkov-Based Small-Angle Calorimeter* 2019, Mar
A. Frankenthal et al., Nuclear Instruments and Methods in Physics Research A, (vol. **919**, 1 March 2019, pages 89-97), <https://doi.org/10.1016/j.nima.2018.12.035>.

TALKS

- Research Seminar on Lie Groups and Moduli Spaces** 2019, Nov
Department of Mathematics, University of Geneva, Switzerland
Invited talk: Introduction to Motivic Amplitudes.
- Conference on Representation Theory and Integrable Systems** 2019, Aug
ETH, Zurich, Switzerland
Contributed talk: Motivic Scattering Amplitudes.
- PADME Weekly Meeting** 2017, Dec
INFN-LNF, Frascati, Italy
Invited talk: Monte Carlo Simulation of SAC.

ACADEMIC ACHIEVEMENTS AND SCHOLARSHIPS

- Excellence Fellowship** 2019
NCCR (National Centre of Competence in Research) SwissMAP, Switzerland

Degree Prize for Distinction <i>St. John's College, University of Oxford, UK</i>	2019
Torno Subito Scholarship <i>Department of Education, Research and University, Lazio, Italy</i>	2018
Best Student Award – Course in Nuclear and Subnuclear Physics <i>University of Rome La Sapienza and INFN, Italy</i>	2018
Summer Student Scholarship <i>INFN, Italy</i>	2017
Excellence Program <i>Department of Physics, University of Rome La Sapienza, Italy</i>	2016 – 2018
Deserving Student Scholarship <i>University of Rome La Sapienza, Italy</i>	2015 – 2018

WORK AND TEACHING EXPERIENCE

Lecturer on Topological Surfaces <i>Master Class in Mathematical Physics – Department of Mathematics, University of Geneva, Switzerland</i>	2019, Oct
Remote Specialist Academic Editor in Mathematics and Statistics <i>AsiaEdit, Hong Kong</i>	2019, Oct
Marker of the Mathematics Admission Test <i>Mathematical Institute, University of Oxford, UK</i>	2018, Nov
Lecturer on Riemannian Geometry <i>Excellence Program in Physics – Department of Mathematics, University of Rome La Sapienza, Italy</i>	2018, Mar – May

ATTENDANCE AT CONFERENCES, WORKSHOPS, ETC.

SwissMAP Winter School in Mathematical Physics <i>Les Diablerets, Switzerland</i>	2020, Feb
6th SwissMAP General Meeting <i>Villars-sur-Ollon, Switzerland</i>	2019, Sep
School on Modular Forms, Periods and Scattering Amplitudes <i>ETH-ITS, Zurich, Switzerland</i>	2019, Feb
Workshop on Quantum Foundations. New frontiers in testing quantum mechanics <i>INFN-LNF, Frascati, Italy</i>	2017, Nov
Workshop on Quantum Foundations. The physics of “what happens” and the measurement problem <i>INFN-LNF, Frascati, Italy</i>	2017, May

MEMBERSHIPS

Mentee of LeadTheFuture Mentorship Program	Sep 2019 – present
Invited Fellow of Italian Physics Society (SIF)	Jan 2019 – present

SKILLS

Italian Language	Native
English Language	Level C2 (CEFR) - Cambridge ESOL Level 3 Certificate
Programming Languages	C, C++, HTML, Perl, R, Python
Version-control Systems	Git
Data Analysis Software	MATLAB, ROOT, gnuplot
Simulation Software	Geant4