Claudia Rella

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Department of Theoretical Physics, University of Geneva
Quai Ernest Ansermet 24, 1205 Geneva, Switzerland

EDUCATION

Doctor of Philosophy in Mathematical Physics   2020 – present
Department of Theoretical Physics, University of Geneva, Switzerland
Thesis: Supervised by Prof Marcos Mariño.
Affiliations: ERC SyG ReNewQuantum – NCCR SwissMAP.

Master of Science in Mathematical and Theoretical Physics – Distinction   2018 – 2019
Mathematical Institute and Department of Physics, University of Oxford, UK
Thesis: *Motivic Amplitudes*. Supervised by Prof Francis Brown.
Affiliations: St John's College.

Bachelor of Science in Physics [*] **– Summa cum Laude**   2015 – 2018
Department of Physics, Sapienza University of Rome, Italy
Thesis: *Photonic Bloch Waves*. Supervised by Prof Fabio Sciarrino.

[*]: Extra-curricular coursework in Mathematics at the Department of Mathematics.

RESEARCH EXPERIENCE AND INTERNSHIPS

Research Internship in High Energy Physics Phenomenology   2020, Jul – Sep
CERN, Geneva, Switzerland

Master Class in Mathematical Physics   2019, Sep – 2020, Jun
University of Geneva and NCCR SwissMAP, Geneva, Switzerland

Business Consulting Internship   2019, Jul – Aug
Pangea Formazione, Rome, Italy

Research Internship in Experimental Particle Physics   2017, Sep – Nov
PADME @ INFN – LNF, Frascati, Italy

OTHER ACTIVITIES

Cooperation Associate of the Department of Theoretical Physics   2022, May – present
CERN, Switzerland

Junior Member of the Scientific Council of the SRS Conference Centre   2020, Sep – present
SwissMAP Research Station (SRS), Switzerland

Mentee at LeadTheFuture Mentorship Program   2019, Sep – present
LeadTheFuture, Italy

PUBLICATIONS

On the structure of wave functions in complex Chern–Simons theory   2023, Dec
With M. Mariño, arXiv:2312.00624
https://doi.org/10.48550/arXiv.2312.00624

Resurgence, Stokes constants, and arithmetic functions in topological string theory   2023, Nov
Commun. Number Theory Phys. 17 (2023), No. 3, pp. 709-820
https://dx.doi.org/10.4310/CNTP.2023.v17.n3.a4

Searching for muonphilic dark sectors with proton beams   2022, Aug
With B. Döbrich and T.-T. Yu, Phys. Rev. D 106 (2022) 3, 035023
https://doi.org/10.1103/PhysRevD.106.035023

An introduction to motivic Feynman integrals   2021, Mar
SIGMA 17 (2021), 032, 56 pages
https://doi.org/10.3842/SIGMA.2021.032

Characterization and performance of PADME's Cherenkov-based small-angle calorimeter   2019, Mar
With A. Frankenthal et al., Nucl. Instrum. Methods Phys. Res. A 919 (2019) 89-97
https://doi.org/10.1016/j.nima.2018.12.035

TALKS AND SEMINARS

Strong-weak duality and quantum modularity of resurgent topological strings   2023, Dec
Geometry and Physics Seminar, University of Sheffield, UK

Strong-weak duality and quantum modularity of resurgent topological strings   2023, Nov
QM Research Seminar, Centre for Quantum Mathematics, SDU, Denmark

Resurgence, Stokes constants, and arithmetic functions in topological string theory   2023, Jul
29th Nordic Congress of Mathematicians with EMS, Aalborg, Denmark

Resurgence, Stokes constants, and arithmetic functions in topological string theory   2023, Apr
Mathematics Seminar, IHES, France

Resurgence, Stokes constants, and arithmetic functions in topological string theory   2023, Mar
Physical Mathematics Seminar, University of Geneva, Switzerland

Stokes constants in topological string theory   2022, Nov
Workshop on Mathematics of Beyond All-Orders Phenomena, University of Cambridge, UK

An introduction to motivic amplitudes   2019, Nov
Seminar on Lie Groups and Moduli Spaces, University of Geneva, Switzerland

Motivic scattering amplitudes   2019, Aug
Conference on Representation Theory and Integrable Systems, ETH Zürich, Switzerland

Monte Carlo simulation of PADME's small-angle calorimeter   2017, Dec
PADME Weekly Seminar, INFN – LNF, Italy

TEACHING EXPERIENCE

Lecturer on Topological Surfaces   2019, Oct
Master Class in Mathematical Physics – Department of Mathematics, University of Geneva, Switzerland

Lecturer on Riemannian Geometry   2018, Mar – May
Excellence Program in Physics – Department of Mathematics, Sapienza University of Rome, Italy

ACADEMIC ACHIEVEMENTS AND SCHOLARSHIPS

Excellence Fellowship   2019 – 2020
NCCR SwissMAP, Switzerland

Degree Prize for Distinction   2019
St John's College, University of Oxford, UK

Torno Subito Scholarship   2018 – 2019
Department of Education, Research, and University, Lazio, Italy

Best Student Award for the Course in Nuclear and Subnuclear Physics   2018
Sapienza University of Rome and INFN, Italy

Summer Student Scholarship   2017
INFN, Italy

Excellence Program   2016 – 2018
Department of Physics, Sapienza University of Rome, Italy

Deserving Student Scholarship   2015 – 2018
Sapienza University of Rome, Italy

SKILLS

Languages	Italian (native), English
Programming Languages	C, C++, Python, R
Data Analysis Languages	MATLAB, ROOT, Gnuplot
Symbolic Calculus Languages	Mathematica, SageMath, PARI/GP
Version-control Systems	Git
Simulation Software	Geant4