



Davide Morgante

Education

- 2021-2024 **PhD**, *University of Milan*, Milan.
Ph.D. student at the University of Milan working, under the supervision of Dr. Antonio Amariti, on formal aspects of (Supersymmetric-)Quantum Field Theories, Holography and String/M-theory.
- 2019-2021 **M.Sc**, *Sapienza University of Rome*, Rome, *110 with Honors*.
Master degree in theoretical high energy physics
- 2016-2019 **B.Sc**, *Sapienza University of Rome*, Rome, *110 with Honors*.
Bachelor degree in physics.

Bachelor Thesis

- Title *Semiclassical transition amplitudes. (original: Ampiezze semiclassiche di transizione.)*
- Advisor Prof. Guido Martinelli
- Short description In my bachelor thesis I analyzed the transition probability of a metastable state for a generic scalar field theory, in the semiclassical limit. In the thesis I also gave the theoretical basis upon which the transition probability was calculated, namely: Feynman path integral formulation, quantum tunneling and classical field theory arising from the collective excitation of a system with many degrees of freedom.

Master Thesis

- Title Unitarity triangle analysis and recent theoretical advancements on ϵ'/ϵ
- Advisor Prof. Guido Martinelli
- Co-advisor Prof. Marco Nardecchia
- Short description In my master thesis I worked on the UT analysis of the ϵ'/ϵ parameter in the $K \rightarrow 2\pi$ decay starting from the recent result from R.Abbott et al. (arXiv:2004.09440v2). The work of my thesis resulted in the publication of a related paper in the "*Rendiconti Lincei*" journal.

Experience

- 2022 **Teaching Assistant**, *University of Milan*, Milan.
I was a TA for the course of Mathematical Methods for Physics held in Unimi. My duties included extra tutoring classes, office hours and lectures.

- 2022 **Teaching**, *University of Milan*, Milan.
I held the course of introductory math for the freshman of the physics bachelor at the University of Milan.
- 1 May - 15 **Visiting PhD**, *SISSA*, Trieste.
- June 2023 I was a visiting PhD student at the International School for Advanced Studies.
- 2023 **Teaching**, *University of Milan*, Milan.
I held the course of introductory math for the freshman of the physics bachelor at the University of Milan.
- 2023 **Teaching Assistant**, *University of Milan*, Milan.
I was a TA for the course of Mathematical Methods for Physics held in Unimi. My duties included extra tutoring classes, office hours and lectures.

Schools and Conferences

- 27-29 Sept 2023 **New Frontiers in Theoretical Physics**, *Cortona*.
Participating at the conference "New Frontiers in Theoretical Physics"
- 3-9 Sept 2023 **Categorical Aspects of Symmetry**, *Les Diablerets*.
Participating at the school "Categorical Aspects of Symmetries"
- 24-29 Jul 2023 **Strings 2023**, *Waterloo*.
Participating at the conference "Strings 2023" at Perimeter Institute
- 24-28 Apr 2023 **Eurostrings 2023**, *Gijon*.
Participating at the conference "Eurostrings 2023"
- 11-13 Jan 2023 **Iberian Strings 2023**, *Murcia*.
Participating at the conference school "Iberian Strings 2023"
- 20-22 Dec 2022 **XVIII Avogadro meeting on Strings, Supergravity and Gauge Theories**, *Turin*.
Participating at the 18th installment of the Avogadro meetings.
- 16 Nov-26 Dec 2022 **LACES 2022**, *Florence*.
Participating at the Advanced Lectures on Fields and Strings doctoral school.
- 21-27 Aug 2022 **CERN Winter School on Supergravity, Strings and Gauge Theory 2022**, *Geneva*.
Participating at the CERN school on Supergravity, Strings and Gauge theories. The main topics covered have been: conformal bootstrap, higher symmetries and defects, spectral theory for gauge and string theory, flux compactifications, holography.
- 12-15 Jun 2022 **Theory of Fundamental Interactions INFN conference**, *Venice*.
Participating at the INFN conference Theory of Fundamental Interactions.
- 9-13 May 2022 **ICTP Spring School on Superstring Theory and Related Topics**, *Trieste*.
Participating at the ICTP Spring School on Superstring Theory and Related Topics. The main topics covered have been: celestial holography, non-invertible symmetries, topological aspects of string theory and strings in AdS_3 .
- 23-25 March 2022 **Iberian Strings 2022**, *Gijón*.
Participating at the conference school "Iberian Strings 2022"

Seminars

- 2 November 2023 **Technion**, *Haifa*, Israel.
Spindly M5s
- 27 Sept 2023 **New Frontiers in Theoretical Physics**, *Cortona*, Italy.
Seminar on "Sporadic dualities from tensor deconfinement" paper

Highlights

2020 **Honours Program**, *Sapienza University*, Rome.

The Honours Programme is an advanced course providing additional training to the normal study programme. For this program, I followed an additional course at Tor Vergata University held by prof. Raffaele Savelli on group theory, representation theory of finite and Lie groups.

2020 **Student Collaboration Scholarship**, *Sapienza University*, Rome, SoRT.

I won one of the 39 collaboration scholarships at the Physics department of Sapienza. All informations can be gathered from the official page <https://www.uniroma1.it/en/pagina/student-collaboration-scholarships>

Languages

Italian Mother tongue

English Overall C2 level

Computer skills

Programming languages C, C++, Python

Libraries: ROOT, Geant4, Scikit-learn, TensorFlow

Data analysis R, Gnuplot

Writing Office package, LaTeX

Misc Basic knowledge of machine learning

List of publications

BBBW on the Spindle, *ArXiv:2309.11362*

Sporadic dualities from tensor deconfinement, *ArXiv:2307.14146*

One-form symmetries in $\mathcal{N} = 3$ S-folds, *ArXiv:2303.07299*

Chiral dualities for SQCD₃ with D-type superpotential, *doi:10.1007/JHEP02(2023)032*

New UFit Analysis of the Unitarity Triangle in the Cabibbo-Kobayashi-Maskawa scheme, *doi:10.1007/s12210-023-01137-5*

Signature

Via Giorgio Bonelli, 37 – 00172 – Roma (RM), Italia

📞 +39 393 6306114 • ✉ davide.morgante96@gmail.com

🌐 davidemorgante.github.io • in [davide-morgante](#)