

Anthony Massidda

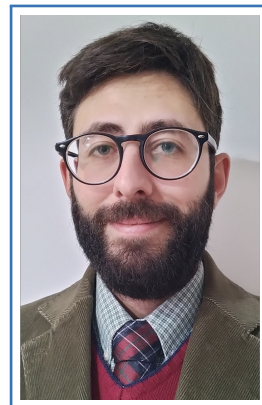
Curriculum Vitae

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PERSONAL INFORMATION

NAME Anthony Massidda

BIRTH Cagliari, 02 September 1992

CITIZENSHIP Italian

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RESEARCH PROFILE

Theoretical physicist with research interests at the interface of mathematical physics, algebraic geometry and quantum field theory. My research focuses on the mathematical structure of scattering amplitudes and Feynman integrals, with particular emphasis on intersection theory, D-modules, Hodge theory. I combine modern techniques from algebraic geometry, topology and symbolic computation to develop new methods for the evaluation and understanding of Feynman integrals and string amplitudes.

RESEARCH INTERESTS AND EXPERTISE

- Analytic methods in Scattering Amplitudes and Feynman Integrals.
- Intersection Theory and Homological Algebra.
- String Amplitudes and Mirror Symmetry.

EDUCATION

2026 PhD in Physics and Astrophysics

at Department of Science and High Technologies, Università degli Studi dell'Insubria.

Final mark *Excellent*.

Thesis: *Exponential Periods for Integrals in Physics.*

Advisor: Prof. Sergio Luigi Cacciatori

2021 Master degree in Theoretical Physics

at Department of Physics and Astronomy, Università degli Studi di Padova,
Final mark 105/110.

Thesis: *A Modern Approach to String Amplitudes and Intersection Theory.*

Supervisor: Prof. Pierpaolo Mastrolia

2014 Bachelor degree in Physics

at Department of Physics, Università degli Studi di Cagliari,
Final mark 110/110 with honors

Thesis: *General Covariance and Spin two Fields.*
Supervisor: Prof. Giuseppe D'Appollonio

2011 High School Diploma

at "Liceo Scientifico Pitagora" Selargius (CA), Maxi-experimental course specialized in Spanish, final mark 100/100 with honors.

ACADEMIC APPOINTMENTS

15/05/26-15/07/26 Visiting Researcher at the Department of Physics and Astrophysics, Padova.

19/01/26-14/02/26 Visiting Researcher at Institut des Hautes Études Scientifiques Université Paris-Saclay (IHES), Bures-Sur-Yvette, Paris.

ACADEMIC SERVICE

Organization of the international workshop *Loops & Geometry: Hidden Structures in Multi-loop Amplitudes* (MITP Youngst@rs, 2026).

Participation in departmental seminars, journal clubs and outreach activities.

INTERNATIONAL SCHOOLS

Domoschool 2025:

Mathematical methods for Particles Physics, Gravitation and Cosmology, 14-18 July 2025, Domodossola, Italy.

Domoschool 2024:

Intersecting Feynman Integrals, 15-19 July 2024 Domodossola, Italy.

Laces 2023:

Lezioni avanzate di Campi e Stringhe
27 Nov- 15 Dec 2024 GGI, Firenze, Italy

Amplitudes 2023 Summer school

31 July- 04 Ago 2023 CERN, Genève, Swiss.

Domoschool 2023:

Einstein equations in the dark side of the Universe,
17-21 July 2023 Domodossola, Italy.

SEMINARS AND TALKS

Exponential Periods for Scattering Amplitudes

Theory group Journal Club (Online)
27/05/2026, Uppsala, Sweden.

Wall crossing structure from quantum phenomena to Feynman integrals

Elliptics and Beyond '25,
03-09-2025, Bonn, Germany.

Wall crossing structure from quantum phenomena to Feynman integrals

Domoschool 2025
14/07/2025, Domodossola, Italy.

Asymptotic Hodge Theory for Feynman Integrals

22/11/2024, Como, Italy.

Asymptotic Hodge Theory for Feynman Integrals

Domoschool 2024,

17/07/2024, Domodossola, Italy.

Chess rating system: Elo

Orthogonal seminar of the PhD course,

15/05/2024, Como, Italy.

String Amplitudes and Intersection Theory

Laces 2023 - Gong show,

28/11/2023, GGI, Firenze, Italy.

A modern approach to String Amplitudes: Intersection Theory

14/11/2023, Como, Italy.

String Amplitudes and Intersection Theory

Amplitudes 2023 Summer School - Gong show,

02/08/2023, CERN, Gèneve, Swiss.

Intersection Theory and String Amplitudes

26/05/2023, Padova, Italy.

A modern approach to String Amplitudes: Intersection Theory

Joint Theory Seminar(Online),

06/10/2022, NBI, Copenhagen, Denmark.

PUBBLICATIONS AND PREPRINTS

R.Angius, S.L.Cacciatori, A.Massidda,

"Wall crossing structure from quantum phenomena to Feynman integrals",

JHEP 01 (2026) 050

TEACHING EXPERIENCE

09/2023 – 07 /2024

Tutor(40h)

UNIVERSITA' DEGLI STUDI DELL'INSUBRIA

Via Valleggio, 11

22100, Como

Organization and management of supporting activities to didactic,
for the course of "Physics I", degrees in Mathematics and Chemistry

10/2022–01/2023

High School Teacher

Liceo Scientifico "Antonio Segni"

Via Satta Sebastiano, 6

07014, Ozieri, (SS)

High school Mathematics and Physics teacher

06/2022-10/2022

Contract Teacher (120h)

Fondazione Istituto Tecnico Superiore Efficienza Energetica Sardegna

Via Milano snc

08015, Macomer, (NU)

Courses: "Notions of Mathematics" and "Fundamentals of Mathematics,
Statistics and Data Analysis"

01/2022–06/2022

High School Teacher

Liceo Scientifico "Antonio Segni"

Via Satta Sebastiano, 6

07014, Ozieri, (SS)

High school Mathematics and Physics teacher

02/2021 – 08/2021 **High School Teacher**
Istituto "Visconti"
Corso del Popolo, 8c
35131, Padova
High school Mathematics and Physics teacher

09/2016 – 07 /2020 **Tutor(540h)**
UNIVERSITA' DEGLI STUDI DI PADOVA
Via Giuseppe Jappelli, 1
35131, Padova

Organization and management of supporting activities to didactic, for the courses:

- Analysis I, degree in Physics;
- Physics I, degree in Physics;
- Experimental physics I, degree in Optics e Optometry;
- Physics with math elements, degree in Pharmacy;
- Mathematics with informatic elements, degree in Pharmaceutical Chemistry and Technology;
- Physics I, degree in Chemistry.
- Physics I, degree in Civil Eng. and Environmental Eng.

PROFESSIONAL SKILLS

During several years of teaching at both university and high-school level, I have developed strong pedagogical, organizational and communication skills through the delivery of lectures, tutorials and problem-solving sessions to students with diverse academic backgrounds. My teaching approach combines mathematical rigour with an intuitive understanding of physical concepts, adapting explanations to the students' level of preparation while maintaining high academic standards. I place particular emphasis on developing analytical reasoning, independent problem-solving abilities and the capability to connect abstract theoretical concepts with concrete physical applications. Extensive experience as a university tutor has enabled me to design and conduct exercise classes, provide individual academic mentoring, assist students in preparing for written and oral examinations, and support them in overcoming conceptual difficulties through personalized guidance. In addition to classroom teaching, I have acquired significant experience in scientific communication through seminars, conference presentations and the organization of international workshops. These activities have strengthened my ability to explain complex scientific ideas clearly and effectively to audiences with different levels of expertise. My research activity has also provided advanced computational skills in symbolic computation and scientific programming, with extensive use of Mathematica, Macaulay2 and LaTeX. I regularly employ computational tools to investigate problems in mathematical physics and to develop educational material, integrating analytical methods with modern computational techniques whenever appropriate. I am accustomed to working both independently and collaboratively in international research environments, demonstrating adaptability, organizational skills and the ability to manage multiple projects simultaneously while meeting deadlines. These experiences have reinforced my commitment to fostering an engaging, inclusive and intellectually stimulating learning environment that encourages curiosity, critical thinking and scientific integrity.

HONORS AND AWARDS

2015 Bachelor thesis award "Franco Meloni".

2011 "Avis provinciale Cagliari" Scholarship.

LANGUAGE SKILLS

ITALIAN Native speakers

ENGLISH Advanced level C1

Academic Ielts certification achieved on 13/01/26 with score 7.5

SPANISH Advanced level C1

Homologation to degrees "Graduado en Educación Secundaria Obligatoria" and "Bachiller", final degree 10/10, realesed by "Ministerio de Educación, Cultura y Deporte", Madrid.

FRENCH Intermediary level B1

TECHNICAL AND COMPUTATIONAL SKILLS

- Mathematica
- Macaulay2
- Python
- LaTeX

