Matteo Lotito

Personal Information:

Name	Matteo Lotito
Date of Birth	01 March 1989
Gender	Male (he/him)
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Professional Experience

October 2024 - Current
Postdoctoral Researcher
Korea Advanced Institute of Science & Technology (KAIST)
Research in the quantum field theory, string theory and mathematical physics groups under the supervision of Prof. H. Kim and Prof. J. Song.

October 2022 - October 2024
Research Fellow (Postdoctoral Researcher)
Center for Theoretical Physics
Seoul National University
Research in the quantum field theory and string theory group under the supervision of Prof.S. Kim.

September 2018 - October 2022
Postdoctoral Research Associate
Amherst Center for Fundamental Interactions
University of Massachusetts Amherst
Research on superconformal field theories, string theory and quantum gravity, under the supervision of Prof. B. Heidenreich.

Education

August 2018
PhD in Physics
University of Cincinnati
Thesis: "Geometric classification of 4d rank-1 $\mathcal{N}=2$ superconformal field theories"
Advisor: Prof. Philip C. Argyres

November 2013
Laurea Magistrale in Fisica (Master of Science in Physics)
University of Rome "La Sapienza"
Thesis: "Free Scalar Field in 3d Gravity and Microcausality"
Advisors: Prof. Giovanni Amelino-Camelia and Dr. Michele Arzano
110/110 *summa cum laude* | Curriculum in theoretical physics

November 2011
Laurea Triennale in Fisica (Bachelor of Science in Physics)
University of Rome "La Sapienza"
Thesis: "Perché le pulsar rallentano" ("Why pulsars slow down")
Advisor: Prof. Valeria Ferrari
110/110 *summa cum laude*

Additional Training

February 2024	Professional Certificate: **Google Data Analytics** Google & Coursera (Certificate Link)
February 2024	Professional Certificate: **Google Project Management** Google & Coursera (Certificate Link)
October 2023	Course: **Introduction to Data Science with Python** Harvard University & edX (Certificate Link)

Teaching Experience

Fall 2019	First Year Seminar course on Special Relativity
2017 - 2018	Lab Instructor for College Physics Lab - Physics Majors
2016	Tutoring for Physics GRE exam
2015 - 2016	Lab Instructor for Intermediate Lab - Physics Majors
Summer 2014/15	Floating TA for General Physics I
2014 - 2015	Recitation and Lab TA for College Physics II
2013 - 2014	Grader for College Physics I / II
2007 - 2013	Tutoring for high-school / college level physics and mathematics

Extracurricular Involvement

2024	Member of the organizing committee of the KAIST workshop on: ‘Aspects of Supersymmetric Quantum Field Theories”
2023	Member of the organizing committee of the ACFI workshop: “Theoretical Tests of the Landscape”
2020 - 2022	Member of the organizing committee of the summer school “Physical Mathematics of Quantum Field Theory”
2020	Organization of a virtual lecture series on “BV formalism for classical and quantum field theories”
2019	Member of the organizing committee of the ACFI workshop: “Theoretical Tests of the Swampland Conjecture”
2017 - 2018	Student representative in university committees for the Graduate Student Governance Association (GSGA) at the University of Cincinnati
2015 - 2018	President of the Physics GSA (Graduate Student Association) at the University of Cincinnati
2017	Member of the organizing committee of “Great Lakes Strings Conference 2017”
2016 - 2021	Volunteering experiences for several running events (course marshal and other supporting roles), most notably Mission Adelaide representative for “Girls on the Run” (Cincinnati) during the Spring 2017 season
2014 - 2016	Founder and main organizer of a student led Particle Physics Journal Club in the Physics Department at the University of Cincinnati
2015	Volunteering for the Physics Department at the 2015 UC Science Fair

Awards and Recognitions

May 2020	Recognition as CIRTL Associate;
February 2018	finalist for the Presidential Medal for Graduate Student Excellence award, Graduate School, University of Cincinnati
February 2017	finalist for the Presidential Medal for Graduate Student Excellence award, Graduate School, University of Cincinnati
May 2016	recipient of the Mary J. Hanna Fellowship, Department of Physics, University of Cincinnati, support for the 2016-17 academic year
March 2016	recipient of a University Research Council Graduate Student Fellowship, University of Cincinnati, support for Summer 2016
January 2016	3rd place in the departmental Annual Poster Competition - selected to represent the Physics Department at the 2016 Student Expo and Poster Forum at the University of Cincinnati

Publications

While my total number of papers is not exceptionally high, these have obtained considerable resonance in the community. The cumulative number of citations is 651, as of June 2024 (INSPIRE HEP).

C, Elliott, O. Gwilliam, M. Lotito
Twists of Superconformal Algebras
Apr 2024, (arxiv/2403.19753)

B. Heidenreich, M. Lotito
Proving the Weak Gravity Conjecture in Perturbative String Theory
Part I: The Bosonic String
Jan 2024, *submitted to JHEP* (arxiv/2401.14449)

P. C. Argyres, M. Lotito, M. Weaver
Vertex algebra of extended operators in 4d N=2 superconformal field theories
Nov 2022, published in JHEP 10 (2023) 175, (arxiv/2211.04410)

I. García Etxebarria, B. Heidenreich, M. Lotito, A. K. Sorout
Deconfining N=2 SCFTs, or the Art of Brane Bending
Nov. 2021, published in JHEP 03 (2022) 140, (arxiv/2111.08022)

P. C. Argyres, M. Lotito
Flavor symmetries and the topology of special Kähler structures at rank 1
Nov. 2018, published in JHEP 02 (2019) 026, (arxiv/1811.00016)

W. Altmannshofer, J. Eby, S. Gori, M. Lotito, M. Martone, D. Tuckler
Collider Signatures of Flavorful Higgs Bosons
Oct. 2016, published in Phys. Rev. D94 (2016) no.11, 115032
(arxiv/1610.02398)

P. C. Argyres, M. Lotito, Y. Lü, M. Martone
Geometric constraints on the space of N=2 SCFTs III:
enhanced Coulomb branches and central charges
Sep. 2016, published in JHEP 02 (2018) 003, (arxiv/1609.04404)

P. C. Argyres, M. Lotito, Y. Lü, M. Martone

Expanding the landscape of N=2 rank 1 SCFTs
Feb. 2016, published in JHEP 05 (2016) 088, (arxiv/1602.02764)

P. C. Argyres, M. Lotito, Y. Lü, M. Martone
Geometric constraints on the space of N=2 SCFTs II: Construction of special Kähler geometries and RG flows
Dec. 2015, published in JHEP 02 (2018) 002, (arxiv/1601.00011)

P. C. Argyres, M. Lotito, Y. Lü, M. Martone
Geometric constraints on the space of N=2 SCFTs I: physical constraints on relevant deformations
May 2015, published in JHEP 02 (2018) 001, (arxiv/1505.04814)

M. Arzano, D. Latini and M. Lotito
Group Momentum Space and Hopf Algebra Symmetries of Point Particles Coupled to 2+1 Gravity
Mar. 2014, published in SIGMA 10 (2014) 079, (arxiv/1403.3038)

Talks and Presentations

June 2024	Invited talk, BPS Dynamics and Quantum Mathematics, GGI
May 2024	Invited talk, Kavli IPMU
May 2024	Invited talk, Korea Institute for Advanced Study
April 2024	Invited talk, APCTP
March 2024	Invited talk, Swampland Seminars (online)
February 2024	Invited talk, Durham University (Willmore fellowship)
June 2023	Invited talk, KAIST
March 2023	Invited talk, Korea Institute for Advanced Study
February 2023	Invited talk, King's College London
February 2023	Invited talk, Queen Mary University of London
July 2022	Invited talk, Strings, Gauge Theory and Branes 2022, APCTP
June 2022	Invited talk, Durham University
June 2022	Invited talk, Imperial College London
May 2022	Invited talk, Oxford University (online)
September 2020	Invited talk, Seminar Series on String Phenomenology
January 2020	Joint Math-Physics seminar, University of Massachusetts Amherst
2018-2021	HEP Journal Club presentations, University of Massachusetts Amherst
December 2017	Student talk, LACES 2017, GGI
November 2017	Invited talk, Princeton University
October 2017	Invited talk, University of California San Diego
October 2017	Invited talk, California Institute of Technology
June 2017	Student talk, TASI 2017, University of Colorado Boulder
February 2017	Grad School Expo and Poster Forum, University of Cincinnati
January 2017	Departmental Annual Poster Competition, Physics Department - University of Cincinnati
January 2017	Parallel session talk, APS April Meeting 2017
May 2016	Invited talk, Josef Stefan Institute
May 2016	Parallel session talk, Phenomenology 2016 Symposium
January 2016	Departmental Annual Poster Competition, Physics Department - University of Cincinnati
July 2015	Parallel session talk, DPF 2015

March 2015	3 minute Gong Show, Great Lakes Strings Conference 2015
2014-2016	HEP Journal Club presentations, University of Cincinnati

Languages

Italian	Mother tongue
English, Spanish	Bilingual proficiency;
French, Portuguese	Limited working proficiency
German, Chinese, Korean, Japanese	Elementary proficiency

Computer Skills

Advanced knowledge	Mathematica, LaTeX, Windows, Mac & Linux OS, Office Suite
Good knowledge	C, Python (numpy, pandas, scikit-learn), HTML/CSS
Intermediate knowledge	C++, R, SQL, Git/Github
Basic knowledge	LabVIEW, GEANT4, ROOT