

LUCA VISINELLI

Tenure-track assistant professor (RTT)
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Education

- December 16, 2011 **Ph.D. in Physics**, *The University of Utah*, Salt Lake City, USA.
Advisor: Prof. Paolo Gondolo. Thesis: [Axions in CDM and inflation models](#)
Declarations and Ph.D. diploma available [\[at this link\]](#).
(Italian:) Equipollenza al titolo di Dottore di ricerca, decreto 0002642 del 17-11-2021 [\[Link\]](#).
- August 5, 2011 **M.Sc. in Physics**, *The University of Utah*, Salt Lake City, USA.
Advisor: Prof. Paolo Gondolo. GPA: 3.982/4.000
- June 22, 2007 **M.Sc. in Physics (Laurea specialistica)**, *University of Bologna*, Italy.
Advisor: Prof. Fiorenzo Bastianelli. Grade: 110/110 *cum Laude*.
Declarations available [\[at this link\]](#).
- October 14, 2005 **B.Sc. in Physics (Laurea triennale)**, *University of Bologna*, Italy.
Advisor: Prof. Giovanni Carlo Bonsignori. Grade: 110/110 *cum Laude*.
Declarations available [\[at this link\]](#).
- July 4, 2002 **High School Diploma**, *High School "E. Fermi"*, Bologna, Italy. Grade: 100/100.

Previous research experience

- 2021 – 2025 **Tenure-Track Associate Professor**, Shanghai Jiao Tong University, Shanghai (China)
Joint Fellowship, [Tsung-Dao Lee Institute](#), Shanghai (China)
- 2020 – 2021 **Marie Skłodowska-Curie "Fellini" fellow**, [INFN Laboratori Nazionali di Frascati](#) (Italy).
Principal investigator: Dr. Enrico Nardi (INFN Laboratori Nazionali di Frascati).
Contract and declarations available [\[at this link\]](#).
- 2019 – 2020 **GRAPPA fellow**, [GRAPPA](#), [University of Amsterdam](#) (Netherlands)
Principal investigator: Prof. Christoph Weniger (GRAPPA, Amsterdam).
Contract and declarations available [\[at this link\]](#).
- 2016 – 2019 **Postdoctoral researcher**, [NORDITA & Stockholm University](#) (Sweden)
Principal investigator: Prof. Katherine Freese (UT Austin & Stockholm U.).
Contract and declarations available [\[at this link\]](#).
- 2013 – 2015 **Postdoctoral fellow**, [Euro-Mediterranean Center \(CMCC\)](#), Bologna (Italy)
Principal investigators: Prof. Simona Masina (CMCC).
Contract and declarations available [\[at this link\]](#).
- 2007 – 2011 **Research assistant**, The University of Utah (USA)

Certifications

- 2025-2037 **Abilitazione Scientifica Nazionale** for the role of "Professore universitario di Prima Fascia", settore concorsuale: "02/A2 - Fisica Teorica delle Interazioni Fondamentali".
The decree proving "Abilitazione scientifica" is accessible [\[at this link\]](#).

Individual Grants Awarded

- August 2023 **Research Fund for International Excellent Young Scientists**, NSFC China, grant No. 12350610240 “Astrophysical Axion Laboratories”. Principal Investigator: **Luca Visinelli**, 2023–2025. Fundings: approx. 110.000 EUR for 2 years. Grant contract accessible [[at this link](#)].
- November 2020 **Start-up grant** offered along with the Fellowship at the [Tsung-Dao Lee Institute](#). Principal Investigator: **Luca Visinelli**, 2021–2027. Startup fund: approx. 210.000 EUR. Offer letter accessible [[at this link](#)].
- November 2020 [Horizon 2020 FELLINI programme](#), issued by the European Union under the **Sklodowska-Curie** COFUND Action. Grant agreement No. 754496 (H2020-MSCA-COFUND- 2016 FELLINI) “Tools for Axions, Leptogenesis, and Neutrino Theories (TALeNT)”. Principal Investigator: **Luca Visinelli**. 2020-2023. Fundings: 50.520,00 EUR/year. Grant contract accessible [[at this link](#)].
- 2007-2008 [Award for PhD students abroad](#), University of Bologna, Italy. Fundings: 26.318,70 EUR/year. Grant contract accessible [[at this link](#)].
- Fall 2006 Undergraduate Student Award, University of Bologna, Italy. Fundings: approx. 2.000 EUR/year.

Group Grants Awarded

- 2025-2026 State Key Laboratory of Dark Matter Physics, Tsung-Dao Lee Institute, Accepted. Approx. 7.000 EUR as personal funds for research purposes.
- Fall 2022 [Green Bank Telescope Proposal: “Continuing the Search for Axion Dark Matter in Andromeda with VEGAS”](#), Accepted (GBT/23A-245). Data has been taken during 2023.
- August 2021 [Green Bank Telescope Proposal: “Searching for Axion Dark Matter in Andromeda Using an X-band Receiver”](#), Accepted (GBT/22A-067). Data has been taken during 2022.

Prizes Awarded

- January 2022 [2021 Buchalter Cosmology Prize \(Third Prize\)](#) for the paper “The XENON1T excess and future prospects” [[hep-ph/2103.15834](#)]. Also announced by the [American Astronomical Society](#). Co-recipients: S. Vagnozzi, P. Brax, A.C. Davis, J. Sakstein.

Other Awards

- Spring 2025 [Tax Relief Award “Rientro dei Cervelli” \(Brain Gain\)](#) issued by the Italian Government
- Fall 2019 [Tax Relief Award for highly skilled immigrants in the Netherlands](#)
- Fall 2016 [Tax Relief Award for foreign key personnel in Sweden](#)
- Spring 2011 Outstanding Teaching Assistantship Award, The University of Utah.
- 2001-2002 Honorable Mention at the Italian Physics Olympiads.

Summary of professional skills and service

- 2021-2025 **Group Leader**, Research group at Shanghai Jiao Tong University and Tsung-Dao Lee Institute. Full capacity includes two postdocs, four PhD students, and visiting members.
- 2021-2025 **Board committee member**, School of Physics and Astronomy, Shanghai Jiao Tong University and Tsung-Dao Lee Institute.
- Fall 2023 **Co-organizer**, [32nd Texas Symposium on Relativistic Astrophysics](#), TDLI Shanghai.
- 2019-today **Member of FLASH** (axion searches), Scientific Advisory Committee.

Participation in Research Contracts

- 2020-2021 **Sklodowska-Curie COFUND Action**.
Principal Investigator: **Luca Visinelli**.
Grant agreement No. 754496 (H2020-MSCA-COFUND- 2016 FELLINI) "Tools for Axions, Leptogenesis, and Neutrino Theories (TALeNT)".
Fundings: 50.520,00 EUR/year.
Grant contract accessible [[at this link](#)].
- 2019-2020 **Dutch Research Council**, contract No. 680.92.18.03 "The Hidden Universe of Weakly Interacting Particles".
Principal Investigator: Prof. Paul De Jong (University of Amsterdam), 2018-2023.
I took part as a GRAPPA Fellow at University of Amsterdam.
- 2016-2019 **Swedish Research Council**, contract No. 638-2013-8993.
Principal Investigator Prof. Katherine Freese (U. of Texas Austin and Stockholm University), 2014-2024. Approximately 10.000.000,00 EUR.
I took part as a postdoc researcher at Stockholm University and Uppsala University.
- 2014-2015 **EU FP7-SPACE** "MyOcean followup", Euro-Mediterranean Centre on Climate Changes (CMCC), Bologna (Italy). Total budget: 99.244,19 EUR.
Principal Investigator Prof. Simona Masina, Division director.
I participated as a post-doctoral researcher at CMCC.
- 2012-2014 **EU FP7-SPACE** "MyOcean2", Euro-Mediterranean Centre on Climate Changes (CMCC), Bologna (Italy). Total budget: 464.980,00 EUR.
Principal Investigator Prof. Simona Masina, Division director.
I participated as a post-doctoral researcher at CMCC.
- 2012-2014 **EU FP7-ENV** "GEOCARBON", Euro-Mediterranean Centre on Climate Changes (CMCC), Bologna (Italy). Total budget: 95.000,00 EUR.
Principal Investigator Prof. Simona Masina, Division director.
I participated as a post-doctoral researcher at CMCC.

Participation in COST Actions

- Spring 2026 COST Action proposal OC-2025-1-28663 “Dark Waves”, Submitted.
Principal investigator: Prof. Alessandro Mirizzi.
I helped with the original concepts of this COST Action, see the invitation [[at this link](#)].
- Spring 2026 COST Action proposal OC-2025-1-28795 “NEXTCOSMO”, Submitted.
Principal investigator: Dr. Eleonora Di Valentino.
I helped with the original concepts of this COST Action, see the invitation [[at this link](#)].
- Spring 2022 [COST Action CA21136 “Cosmoverse”](#), Approved.
Principal investigator: Dr. Eleonora Di Valentino.
- Spring 2022 [COST Action CA21106 “COSMIC WISPerS in the Dark Universe”](#), Approved.
Principal investigator: Prof. Alessandro Mirizzi.
I helped with the original concepts of this COST Action, see the invitation [[at this link](#)].

Academic Service

- Fall 2025 **Ph.D. Dissertation Committee Member**, candidate: Ian DSouza, University of Canterbury, NZ. Participation as a thesis committee member.
- Fall 2025 **MSCA Fellowship Evaluation**.
Invited evaluator for proposals under the Marie Skłodowska-Curie Actions programme.
- Fall 2025 **Master Degree Committee Member**, Department of Physics, Università degli Studi di Salerno. Participation in the graduation committee for the Master’s Degree in Physics (Laurea Specialistica) on 22/10/2025.
- 2021-2025 **Committee member**, Tsung-Dao Lee Institute and Shanghai Jiao Tong University.
I regularly take part in the committees for selecting graduate students, postdocs, junior professors, as well as prizes and grants for students and researchers.
- 2024-2025 **Member of CSC** (China Scholarship Council), Shanghai Jiao Tong University.
The committee selects the students eligible for grants to be spent abroad.
- 2024 **External committee member** for MSc degrees, Fudan University (Shanghai).
- 2023 **Co-organizer** of the “Tea time” colloquia at the Tsung-Dao Lee Institute.
- 2017-2018 **Postdoc Representative** of Nordita (Administrative position), Stockholm (Sweden).
- 2017-2018 **Co-organizer** of the “Beyond the Standard Model” workgroup at Stockholm University.
- 2016-Today Regular refereeing for Physical Review Letters (PRL), Physical Review D (PRD), Physics Letters B (PLB), Physics of the Dark Universe (PDU), Journal of Cosmology & Astroparticle Physics (JCAP), Modern Physics Letters A (MPLA), Universe.
Number of reports per year from www.webofscience.com available [[at this link](#)]

Organization of international conferences

- June 2026 **Co-organizer** of the workshop: “Exploring New Frontiers in Cosmology: The quest for a more comprehensive concordance model”, Galileo Galilei Institute, Arcetri (Italy)
- March 2026 **Co-organizer** of the workshop: “PAFT2026”, Vietri sul mare, SA (Italy)
- November 2025 **Convener**, [TeVPA 2025](#), Valencia, Spain.
- November 2024 **Scientific organizing committee**, [Shanghai Symposium on Particle Physics and Cosmology](#) (SPCS 2024), TDLI Shanghai. My contribution is listed on the poster page [[at this link](#)].
- December 2023 **Local organizing committee**, [32nd Texas Symposium on Relativistic Astrophysics](#), TDLI Shanghai. My contribution is listed [[at this link](#)].
I have been responsible for the [Mini-symposium on dark matter](#).
- October 2023 **Organizer**, [Advancements in Axion Physics](#) workshop, TDLI Shanghai. [YouTube](#)

Involvement with experimental searches

- 2021-Today **ASTRA** (Axion Search via Telescope for Radio Astronomy), University of Virginia, USA
Principal Investigator: Prof. Bradley Johnson bradley.johnson@virginia.edu.
We submitted a proposal to build a dedicated radio telescope at Fan Mountain, Virginia (USA).
In Fall 2022 we have been awarded the grant [Green Bank Telescope Proposal: “Continuing the Search for Axion Dark Matter in Andromeda with VEGAS”](#) (GBT/23A-245).
In August 2021 we have been awarded the grant [Green Bank Telescope Proposal: “Searching for Axion Dark Matter in Andromeda Using an X-band Receiver”](#) (GBT/22A-067).
- 2019-Today **FLASH** (FINUDA magnet for Light Axion Search), INFN Laboratori Nazionali di Frascati, Frascati (Roma), Italy.
Principal Investigator: Dr. Claudio Gatti claudio.gatti@lnf.infn.it.
Since Summer 2024, I am one of the coordinators for the theory section of the technical design report.

Service in Editorial Boards

- 2024-today **Symmetry** Section Board Member: www.mdpi.com/journal/symmetry/editors/visinelli.
- 2020-2022 Guest editor for the Special Issue of the journal Universe: “*Dark Matter and Dark Energy: Particle Physics, Cosmology, & Experimental Searches*” (2024).
Link: www.mdpi-com/journal/universe/special_issues/DM_DE.

Teaching Experience

- Spring 2026 Fisica I (4 CFU), Università di Salerno (Italy)
- Spring 2025 Fisica I (2 CFU), Università di Salerno (Italy)
- Spring 2025 Laboratorio di Meccanica e Termodinamica (1 CFU), Università di Salerno (Italy)
- 2017 Lecturer for FK5024 “Nuclear physics”, Stockholm University, Stockholm (Sweden).
The course reflections are available [\[at this link\]](#).
- 2015-2016 Lecturer for “Introductory Mathematics”, Department of Political Sciences, University of Bologna (Italy)
The documentation proving the enrollment is available [\[at this link\]](#).
- 2015 Teaching assistant in Mathematics for International Markets, Department of Economics, University of Bologna. Supervisor: Prof. Sabrina Mulinacci
The documentation proving the enrollment is available [\[at this link\]](#).
My tutoring contributor has been acknowledged [\[at this webpage\]](#).
- 2015 Teaching assistant for “Mathematics for Economics and Finance”, Department of Economics, University of Bologna. Supervisor: Prof. Alessandra Giovagnoli
The documentation proving the enrollment is available [\[at this link\]](#).
- 2010-2011 Teaching assistant for Physics 3740, “Special relativity and quantum mechanics”, The University of Utah. Supervisors: Prof. Kyle Dawson and Prof. Jordan Gerton
- 2009 Teaching assistant for Physics 5020, “Electromagnetism”, The University of Utah. Supervisor: Prof. Mikhail Raikh
- 2008 Teaching assistant for Physics 5010, “Classical and Quantum Mechanics”, The University of Utah. Supervisor: Prof. Mikhail Raikh

Research in Physics

Topics Theoretical physics, astroparticle physics, and cosmology.

Sample talk: my presentation in Georgetown University (Washington D.C.) for the Vera Rubin Symposium in 2019, link: <https://www.youtube.com/watch?v=iazE3tBg2cw>

Programming skills

- Systems Linux, UNIX, Mac OS, Microsoft.
- Programming Python, Fortran, C/C++, Visual Basic, Pascal, parallel computing with MPI.
- Calculus Mathematica, Matlab, R.
- Databases Maintenance of numerical codes using the GIT repository
- Datasets Manipulating large datasets in different format: NetCDF, ASCII, NCO, CDO.
- Supercomputer High performance computing (IBM iDataplex cluster “Athena”, 7712 cores).
- Text editor Microsoft Office, L^AT_EX, Vi.
- Software used GAL PROP, DarkSUSY, Gadget2, MESA, NEMO, BFM.

Postdocs supervision

- 2024-today Hong-Yi Zhang, Tsung-Dao Lee Institute. <https://inspirehep.net/1790638>
2022-2024 Michael Zantedeschi, Tsung-Dao Lee Institute. <https://inspirehep.net/1859878>

Mentoring of PhD students

- 2023-today Hanyu Cheng, Tsung-Dao Lee Institute & Shanghai Jiao Tong University.
2023-today Ziwen Yin, Tsung-Dao Lee Institute & Shanghai Jiao Tong University.
2024-2025 Xinhui Chu, Tsung-Dao Lee Institute & Shanghai Jiao Tong University
2024-2025 Yongzhi Tang, Tsung-Dao Lee Institute & Shanghai Jiao Tong University

Mentoring of undergraduate and master students

- 2023-2024 I have supervised **Qixuan Xu** during a leap year at the Tsung-Dao Lee Institute (China). He is now a PhD candidate at Instituto Superior Técnico, Lisboa
2022-2023 I have supervised **Kratika Mazde**, M.Sc. Indian Institute of Science Education and Research. Kratika is now a graduate student at Institut Astrophysique de Paris. Kratika has defended her thesis in Summer 2022 and we have published one article in Physical Review D on topics related to cosmology and astrophysics. Her M.Sc. thesis with my mention is found [[at this link](#)].
2019-2020 I have supervised **Nicklas Ramberg**, M.Sc. Uppsala University. Nicklas is now a postdoc at SISSA. His M.Sc. thesis with my mention is found [[at this link](#)].

Co-Supervision of PhD and M.Sc. students

- 2023-2024 Andrea Boccia (Ph.D. student, University of Napoli). Main advisor: Fabio Iocco.
2021-2023 Rittick Roy (M.Sc. student, Fudan University). Main advisor: Cosimo Bambi.
2019-2022 Youjia Wu (Ph.D. student, University of Michigan). Main advisor: Katherine Freese.
2017-2018 Janina Renk (Ph.D. student, Stockholm University). Main advisor: Joakim Edsjö.

Researchers endorsed with reference letters

Andrea Boccia, Luca Caloni, Salvatore Sirletti, Kratika Mazde, Nicklas Ramberg, Rittick Roy, Sunny Vagnozzi, Qixuan Xu, Michael Zantedeschi, Hong-Yi Zhang

Summary of publication records

94 papers (of which 84 published/accepted on top-tier JCR journals), **h-index=46**; 11500+ total citations, 21 (43) papers with 100+ (50+) citations; 139.1 average citations per refereed paper (INSPIRE statistics as of October 29, 2025).

Full list of publications provided below, see also my [INSPIRE](#), [ADS](#), and [Google Scholar](#).

ORCID [0000-0001-7958-8940](#)

ResearcherID [J-5573-2015](#)

Scopus [34168444500](#)

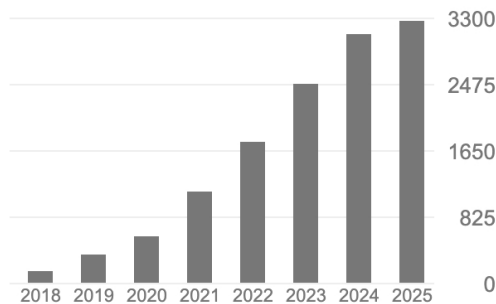
ArXiv My article list on <https://arxiv.org>

Sciprofiles <https://sciprofiles.com/profile/lucavisinelli>

GIT Repository <https://github.com/lucavisinelli>

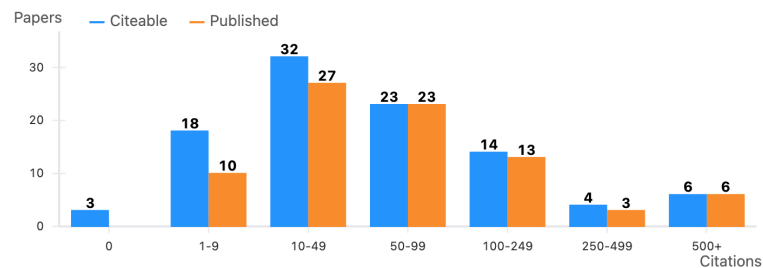
Summary of statistics as of October 29, 2025

	All	Since 2020
Citations	13214	12397
h-index	49	46
i10-index	80	77



Citations per year (Google Scholars)

	Citeable ⓘ	Published ⓘ
Papers	100	82
Citations	12,255	11,617
h-index ⓘ	48	46
Citations/paper (avg)	122.5	141.7



Total number of citations (HEP-INSPIRE)

Articles published in peer-reviewed international journals

A complete list of my publications can be found at: <http://inspirehep.net/author/profile/L.Visinelli.1>

84. W. Lin, **L. Visinelli**, and T.T Yanagida,
Testing Quintessence Axion Dark Energy with Recent Cosmological Results,
JCAP **2510**, 023 [[astro-ph/2504.17638](#)] (2025).
83. H.-Y. Zhang, P. Arias, A. Cheek, E. Schiappacasse, **L. Visinelli**, and L. Roszkowski,
Dark photon dark matter from flattened axion potentials,
J. High Energ. Phys. **2025**, 142 [[hep-ph/2507.20484](#)] (2025).
82. H. Cheng, E. Di Valentino, L. Escamilla, A. Sen, and **L. Visinelli**,
Pressure Parametrization of Dark Energy: First and Second-Order Constraints with Latest Cosmological Data, *JCAP* **2509**, 031 [[astro-ph/2505.02932](#)] (2025).
81. A. Cheek, **L. Visinelli**, and H.-Y. Zhang,
Testing the dark origin of neutrino masses with oscillation experiments,
Phys. Rev. Lett. **135**, 031801 [[hep-ph/2503.08439](#)] (2025).
80. M. Zantedeschi and **L. Visinelli**,
Ultralight Black Holes as Sources of High-Energy Particles,
Phys. Dark Univ. **49**, 102034 [[astro-ph/2410.07037](#)] (2025).
79. G. Lambiase, T.K. Poddar, and **L. Visinelli**,
Impact of the cosmic neutrino background on black hole superradiance,
Phys. Rev. D **112**, 016010 [[hep-ph/2503.02940](#)] (2025).
78. D. Ayzenberg *et al* (with **L. Visinelli**),
Fundamental physics opportunities with future ground-based mm/sub-mm VLBI arrays,
Living Rev. Relativ. **28**, 4 [[astro-ph/2312.02130](#)] (2025).
77. E. Di Valentino *et al*, (**L. Visinelli** as Section Coordinator),
The CosmoVerse White Paper,
Phys. Dark Univ. **49**, 101965 [[astro-ph/2504.01669](#)] (2025).
76. A. Boccia, F. Iocco, and **L. Visinelli**,
Constraining the primordial black hole abundance through Big-Bang nucleosynthesis,
Phys. Rev. D **111** 063508 [[astro-ph/2405.18493](#)] (2025).
75. **L. Visinelli**,
Inflating without a flat potential: Viscous inflation,
Phys. Dark Univ. **48**, 101921 [[gr-qc/1604.03873](#)] (2025).
74. L. Walters *et al* (with **L. Visinelli**),
Searching for Axions in the Andromeda Galaxy with the Green Bank Telescope,
Phys. Rev. D **110** 12 [[astro-ph/2407.13060](#)] (2024).
73. Y.-D. Tsai, D. Farnocchia, M. Micheli, S. Vagnozzi, and **L. Visinelli**,
Constraints on fifth forces and ultralight dark matter from OSIRIS-REx target asteroid Bennu,
Nature Commun. Phys. **7**, 311 [[hep-ph/2309.13106](#)] (2024).

72. **L. Visinelli**, T.T. Yanagida, and M. Zantedeschi,
Do neutrinos bend? Consequences of an ultralight gauge field as dark matter,
Phys. Dark Univ. **46**, 101659 [[hep-ph/2407.18300](#)] (2024).
71. Z. Yin and **L. Visinelli**,
Axion star condensation around primordial black holes and microlensing limits,
JCAP **2410**, 013 [[gr-qc/2404.10340](#)] (2024).
70. H. Cheng and **L. Visinelli**,
Future targets for light gauge bosons from cosmic strings,
Phys. Dark Univ. **46**, 101667 [[hep-ph/2408.16334](#)] (2024).
69. T. O'Shea, A.-C. Davis, M. Giannotti, S. Vagnozzi, **L. Visinelli**, and J. Vogel,
Solar chameleons: novel channels (I),
Phys. Rev. D **110**, 063027 [[hep-ph/2406.01691](#)] (2024).
68. C. Gatti, **L. Visinelli**, M. Zantedeschi,
Cavity Detection of Gravitational Waves: Where Do We Stand?,
Phys. Rev. D **110**, 023018 [[gr-qc/2403.18610](#)] (2024).
67. F. Iocco and **L. Visinelli**,
Compatibility of JWST results with exotic halos,
Phys. Dark Univ. **44**, 101496 [[astro-ph/2403.13068](#)] (2024).
66. S. Bulanov *et al* (with **L. Visinelli**),
The science case for an intermediate energy advanced and novel accelerator linear collider facility,
JINST **19**, T01010 [[physics.acc-ph/2203.08425](#)] (2024).
65. G. Montefalcone, V. Aragam, **L. Visinelli**, and K. Freese,
WarmSPY: A numerical study of cosmological perturbations in warm inflation,
JCAP **2401**, 032 [[astro-ph/2306.16190](#)] (2024).
64. A. Addazi, Y.-F. Cai, A. Marcianò, and **L. Visinelli**,
Have pulsar timing array methods detected a cosmological phase transition?,
Phys. Rev. D **109**, 015028 [[astro-ph/2306.17205](#)] (2024).
63. D. Alesini *et al* (with **L. Visinelli**) [**FLASH** collaboration],
The future search for low-frequency axions and new physics with the FLASH resonant cavity experiment at Frascati National Laboratories,
Phys. Dark Univ. **42**, 101370 [[physics.ins-det/2309.00351](#)] (2023).
62. G. Lambiase, L. Mastrototaro, and **L. Visinelli**,
Astrophysical neutrino oscillations after pulsar timing array analyses,
Phys. Rev. D **108**, 123028 [[astro-ph/2306.16977](#)] (2023).
61. S. Vagnozzi, R. Roy, Y.-D. Tsai, **L. Visinelli**, and others, *Horizon-scale tests of gravity theories and fundamental physics from the Event Horizon Telescope image of Sagittarius A**,
Class. Quant. Grav. **40**, 165007 [[gr-qc/2205.07787](#)] (2023).
60. Y.-D. Tsai, Y. Wu, S. Vagnozzi, and **L. Visinelli**,
Novel constraints on fifth forces and ultralight dark sector with asteroidal data,
JCAP **2304**, 031 [[hep-ph/2107.04038](#)] (2023).

59. A. Litsa, K. Freese, E. Sfakianakis, P. Stengel, and **L. Visinelli**,
Primordial non-Gaussianity from the Effects of the Standard Model Higgs during Reheating after Inflation, *JCAP* **2303**, 033 [[hep-ph/2011.11649](#)] (2023).
58. G. Montefalcone, V. Aragam, **L. Visinelli**, and K. Freese,
Observational constraints on warm natural inflation,
JCAP **2303**, 002 [[gr-qc/2212.04482](#)] (2023).
57. G. Montefalcone, V. Aragam, **L. Visinelli**, and K. Freese,
Constraints on the scalar-field potential in warm inflation,
Phys. Rev. D **107**, 063543 [[gr-qc/2209.14908](#)] (2023).
56. K. Mazde and **L. Visinelli**,
The interplay between the dark matter axion and primordial black holes,
JCAP **2301**, 021 [[astro-ph/2209.14307](#)] (2023).
55. G. Lambiase, L. Mastrototaro, and **L. Visinelli**,
Gravitational waves and neutrino oscillations in Chern-Simons axion gravity,
JCAP **2301**, 011 [[hep-ph/2207.08067](#)] (2023).
54. L. Caloni, M. Gerbino, M. Lattanzi, and **L. Visinelli**,
Novel cosmological bounds on thermally-produced axion-like particles,
JCAP **2209**, 021 [[astro-ph/2205.01637](#)] (2022).
53. W. Lin, **L. Visinelli**, D. Xu, and T.T. Yanagida,
Neutrino astronomy as a probe of physics beyond the Standard Model,
Phys. Rev. D **106**, 075011 [[hep-ph/2202.04496](#)] (2022).
52. Y. Wu, S. Baum, K. Freese, **L. Visinelli**, and H.-B. Yu,
Dark stars powered by self-interacting dark matter,
Phys. Rev. D **106**, 043028 [[hep-ph/2205.10904](#)] (2022).
51. Y. Chen, R. Roy, S. Vagnozzi, and **L. Visinelli**,
Superradiant evolution of the shadow and photon ring of Sagittarius A^{}*,
Phys. Rev. D **106**, 043021 [[astro-ph/2205.06238](#)] (2022).
50. S. Vagnozzi and **L. Visinelli**,
Note on fundamental physics tests from black hole imaging,
Res. Notes AAS **6**, 106 [[astro-ph/2205.11314](#)] (2022).
49. **L. Visinelli** and H. Terças,
B-field induced mixing between Langmuir waves and axions,
Phys. Rev. D **105**, 096024 [[hep-ph/1807.06828](#)] (2022).
48. E Di Valentino *et al*,
A Review of the Particle Physics, Astrophysics, and Cosmology Associated with the Cosmological Tensions and Anomalies,
J. High En. Astrophys. **2204**, 002 [[astro-ph/2203.06142](#)] (2022).
47. R. Roy, S. Vagnozzi, and **L. Visinelli**,
Superradiance evolution of black hole shadows revisited,
Phys. Rev. D **105**, 083002 [[astro-ph/2112.06932](#)] (2022).

46. B. Barman, N Bernal, N Ramberg, and **L. Visinelli**,
QCD Axion Kinetic Misalignment without Prejudice,
Universe **8**(12), 634 [[hep-ph/2111.03677](#)] (2022).
45. **L. Visinelli**,
Boson Stars and Oscillatons: A Review,
Int. J. Mod. Phys. D **30** 15, 2130006
[[gr-qc/2109.05481](#)] (2021).
44. G. Choi, W Lin, **L. Visinelli**, and T.T Yanagida, *Cosmic Birefringence and Electroweak Axion Dark Energy*, *Phys. Rev. D* **104**, L101302 [[hep-ph/2106.12602](#)] (2021).
43. A. Litsa, K. Freese, E. Sfakianakis, P. Stengel, and **L. Visinelli**, *Large Density Perturbations from Reheating to Standard Model particles due to the Dynamics of the Higgs Boson during Inflation*, *Phys. Rev. D* **104** 12, 123546 [[hep-ph/2009.14218](#)] (2021).
42. T. Edwards, B. Kavanagh, **L. Visinelli**, and C. Weniger,
Transient Radio Signatures from Neutron Star Encounters with QCD Axion Miniclusters,
Phys. Rev. Lett. **127**, 131103 [[hep-ph/2011.05378](#)] (2021).
41. B. Kavanagh, T. Edwards, **L. Visinelli**, and C. Weniger,
Stellar Disruption of Axion Miniclusters in the Milky Way,
Phys. Rev. D **104**, 063038 [[astro-ph/2011.05377](#)] (2021).
40. S. Vagnozzi, **L. Visinelli**, P. Brax, A. C Davis, and J. Sakstein,
Direct detection of dark energy: the XENON1T excess and future prospects,
Phys. Rev. D **104**, 063023 [[hep-ph/2103.15834](#)] (2021).
39. B. Carr, F. Kühnel, and **L. Visinelli**,
Black Holes and WIMPs: All or Nothing or Something Else,
Mon. Not. Roy. Astron. Soc. **506** 3, 3648 (2021) [[astro-ph/2011.01930](#)] (2021).
38. E. Di Valentino, O. Mena, S. Pan, **L. Visinelli**, W Yang, A. Melchiorri, D. F. Mota, A. G. Riess, and J. Silk,
In the Realm of the Hubble tension - a Review of Solutions,
Class. Quant. Grav. **38**, 153001 [[astro-ph/2103.01183](#)] (2021).
37. N Ramberg and **L. Visinelli**,
QCD axion and gravitational waves in light of NANOGrav results,
Phys. Rev. D **103**, 063031 [[astro-ph/2012.06882](#)] (2021).
36. T Rindler-Daller, K Freese, R Townsend, and **L. Visinelli**,
Stability and Pulsation of the First Dark Stars,
Mon. Not. Roy. Astron. Soc. **503** 3, 3677 [[astro-ph/2011.00231](#)] (2021).
35. B. Carr, F. Kühnel, and **L. Visinelli**,
Constraints on Stupendously Large Black Holes,
Mon. Not. Roy. Astron. Soc. **501** 2, 2029 [[astro-ph/2008.08077](#)] (2021).
34. E. Di Valentino *et al*,
Cosmology Intertwined IV: The Age of the Universe and its Curvature,
Astropart. Phys. **131**, 102607 [[astro-ph/2008.11286](#)] (2021).

33. E. Di Valentino *et al*,
Cosmology Intertwined III: $f\sigma_8$ and S_8 ,
Astropart. Phys. **131**, 102604 [[astro-ph/2008.11285](#)] (2021).
32. E. Di Valentino *et al*,
Cosmology Intertwined II: The Hubble Constant Tension,
Astropart. Phys. **131**, 102605 [[astro-ph/2008.11284](#)] (2021).
31. E. Di Valentino *et al*,
Cosmology Intertwined I: Perspectives for the Next Decade,
Astropart. Phys. **131**, 102606 [[astro-ph/2008.11283](#)] (2021).
30. L. Di Luzio, M. Giannotti, E. Nardi, and **L. Visinelli**,
The landscape of QCD axion models,
Physics Reports **1**, 870 [[hep-ph/2003.01100](#)] (2020).
[Corrigendum: *Physics Reports* **6**, 006 (2022).]
29. S. Vagnozzi, C. Bambi, and **L. Visinelli**,
Concerns regarding the use of black hole shadows as standard rulers,
Class. Quant. Grav. **37**, 8 [[gr-qc/2001.02986](#)] (2020).
28. S. Vagnozzi, **L. Visinelli**, O. Mena, and D. Mota,
Do we have any hope of detecting scattering between dark energy and baryons through cosmology?,
Mon. Not. R. Astron. Soc. **493** 1, 1139 [[gr-qc/1911.12374](#)] (2020).
27. **L. Visinelli** and J. Redondo,
Axion Miniclusters in Modified Cosmological Histories,
Phys. Rev. D **101**, 023008 [[hep-ph/1808.01879](#)] (2020).
26. **L. Visinelli**, S. Vagnozzi, and U. Danielsson,
Revisiting a negative cosmological constant from low-redshift data,
Symmetry **11**(8), 1035, Special Issue [[astro-ph/1907.07953](#)] (2019).
25. T. Tenkanen and **L. Visinelli**,
*Axion dark matter from Higgs inflation with an intermediate H_** ,
JCAP **1908**, 033 [[astro-ph/1906.11837](#)] (2019).
24. E. Di Valentino, R. Ferreira, **L. Visinelli**, and U. Danielsson,
Late time transitions in the quintessence field and the H_0 tension,
Phys. Dark Univ. **26**, 100385 [[astro-ph/1906.11255](#)] (2019).
23. C. Bambi, K. Freese, S. Vagnozzi, and **L. Visinelli**,
Testing the rotational nature of the supermassive object M87 from the circularity and size of its first image*,
Phys. Rev. D **100**, 044057 [[gr-qc/1904.12983](#)] (2019).
22. S. Vagnozzi and **L. Visinelli**,
*Hunting for extra dimensions in the shadow of M87**,
Phys. Rev. D **100**, 024020 [[gr-qc/1905.12421](#)] (2019).
21. N. Ramberg and **L. Visinelli**,
Probing the Early Universe with Axion Physics and Gravitational Waves,
Phys. Rev. D **99**, 123513 [[astro-ph/1904.05707](#)] (2019).

20. W. H. Kinney, S. Vagnozzi, and **L. Visinelli**,
The Zoo Plot Meets the Swampland: Mutual (In)Consistency of Single-Field Inflation, String Conjectures, and Cosmological Data,
Class. Quant. Grav. **36**, 11 [[astro-ph/1808.06424](#)] (2019).
19. **L. Visinelli** and S. Vagnozzi,
Cosmological window onto the string axiverse and the supersymmetry breaking scale,
Phys. Rev. D **99**, 063517 [[hep-ph/1809.06382](#)] (2019).
18. S. Boucenna, F. Kühnel, T. Ohlsson, and **L. Visinelli**,
Novel Constraints on Mixed Dark-Matter Scenarios of Primordial Black Holes and WIMPs,
JCAP **1807**, 003 [[hep-ph/1712.06383](#)] (2018).
17. K Freese, E. Sfakianakis, P Stengel, and **L. Visinelli**,
The Standard Model Higgs Boson can delay Reheating in Inflation,
JCAP **1805**, 067 [[hep-ph/1712.03791](#)] (2018).
16. **L. Visinelli**, N. Bolis, and S. Vagnozzi,
Brane-world extra dimensions in light of GW170817,
Phys. Rev. D **97**, 064039 [[gr-qc/1711.06628](#)] (2018).
15. **L. Visinelli**, S. Baum, J. Redondo, K. Freese, F. Wilczek,
Dilute and dense axion stars,
Phys. Lett. B **777**, 64 [[astro-ph/1710.08910](#)] (2018).
14. **L. Visinelli**,
(Non-)thermal production of WIMPs during kination,
Symmetry **10**, 546 [[astro-ph/1710.11006](#)] (2018).
13. **L. Visinelli**,
Light axion-like dark matter must be present during inflation,
Phys. Rev. D **96**, 023013 [[astro-ph/1703.08798](#)] (2017).
12. S. Baum, **L. Visinelli**, K. Freese, and P. Stengel,
Dark matter capture, sub-dominant WIMPs, and neutrino observatories,
Phys. Rev. D **95**, 043007 [[astro-ph/1611.09665](#)] (2017).
11. **L. Visinelli**,
Observational Constraints on Monomial Warm Inflation,
JCAP **1607**, 054 [[astro-ph/1605.06449](#)] (2016).
10. **L. Visinelli**,
Condensation of Galactic Cold Dark Matter,
JCAP **1607**, 009 [[hep-ph/1509.05871](#)] (2016).
9. **L. Visinelli**, S. Masina, M. Vichi, A. Storto, and T. Lovato,
Impacts of Data Assimilation on the Global Ocean Carbonate System,
Journal of Marine Systems **158**, 106 (2016).
8. **L. Visinelli** and P. Gondolo,
Kinetic decoupling of WIMPs: analytic expressions,
Phys. Rev. D **91** 8, 083526 [[astro-ph/1501.02233](#)] (2015).

7. **L. Visinelli**,
Neutrino flavor oscillations in a curved space-time,
Gen. Rel. Grav. **47** 5, 62 [[gr-qc/1410.1523](#)] (2015).
6. **L. Visinelli**,
Cosmological perturbations for an inflaton field coupled to radiation,
JCAP **1501**, 005 [[astro-ph/1410.1187](#)] (2015).
5. P. Gondolo and **L. Visinelli**,
Axion Cold Dark Matter in view of BICEP2 results,
Phys. Rev. Lett. **113**, 011802, Editor's Suggestion [[hep-ph/1403.4594](#)] (2014).
4. **L. Visinelli**,
Axion-Electromagnetic Waves,
MPLA **28**, 35 [[physics.class-ph/1401.0709](#)] (2013).
3. **L. Visinelli**,
Natural Warm Inflation,
JCAP **1109**, 013 [[astro-ph/1107.3523](#)] (2011).
2. **L. Visinelli** and P. Gondolo,
Axions Cold Dark Matter in Nonstandard Cosmologies,
Phys. Rev. D **81**, 063508 [[astro-ph/0912.0015](#)] (2010).
1. **L. Visinelli** and P. Gondolo,
Dark Matter Axions Revisited,
Phys. Rev. D **80**, 035024 [[astro-ph/0903.4377](#)] (2009).

Articles currently under review

5. Y.-F. Cai, **L. Visinelli**, and S.-F. Yang,
Atomic Quantum Sensors for High-Frequency Gravitational Wave Searches,
Submitted to PRL [[astro-ph/2510.15031](#)] (2025).
4. M. Figliolia, F. Grippa, G. Lambiase, and **L. Visinelli**,
Gravitational Signatures of Axion Dark Matter via Parity-Violating Interactions,
Submitted to PRD [[astro-ph/2509.12038](#)] (2025).
3. H. Cheng, Z. Yin, E. Di Valentino, D. J. E. Marsh, and **L. Visinelli**,
Constraining exotic high- z reionization histories with Gaussian processes and the cosmic microwave background,
Submitted to PRL [[astro-ph/2506.19096](#)] (2025).
2. Z. Yin, H. Cheng, E. Di Valentino, N. Gendler, D. J. E. Marsh, and **L. Visinelli**,
Constraining the axiverse with reionization,
Submitted to PRD [[hep-ph/2507.03535](#)] (2025).
1. H. Cheng, E. Di Valentino, and **L. Visinelli**,
Cosmic Strings as Dynamical Dark Energy: Novel Constraints,
Submitted to MNRAS [[astro-ph/2505.22066](#)] (2025).

Proceedings

5. **L. Visinelli**,
Axions as dark matter, dark energy, or dark radiation,
In preparation for Proceedings of Science [[hep-ph/2509.17059](#)] (2026).
4. **L. Visinelli et al**,
Indirect detection of the QCD axion,
Proceedings of Science **474**, 23 [[astro-ph/2411.19441](#)] (2025).
3. **L. Visinelli**,
Theoretical Motivations for Hidden Light Bosons,
Nuclear and Particle Physics Proceedings **346**, 2 (2024).
2. **L. Visinelli**,
Analytic expressions for the kinetic decoupling of WIMPs,
Journal of Physics - Conference Series **718** [[astro-ph/1601.00817](#)] (2016).
1. **L. Visinelli** and P. Gondolo,
Axion Cold Dark Matter Revisited,
Journal of Physics - Conference Series **203** [[astro-ph/0910.3941](#)] (2010).

Articles in preparation

5. G.-W. Yuan, A.-C. Davis, M. Giannotti, S. Vagnozzi, **L. Visinelli**, and J. Vogel,
Direct detection of solar chameleons with electron recoil data from XENONnT, in preparation.
4. H. Banks, A.-C. Davis, and **L. Visinelli**, *Solar chameleons*, in preparation.
3. G.F. Vitale, G. Lambiase, T.K. Poddar, and **L. Visinelli**, *PBH*, in preparation.
2. R. Impavido, N. Barbieri, L. Caloni, M. Lattanzi, and **L. Visinelli**, *Cosmological bounds on ALPs from strings*, in preparation.
1. N. Barbieri, L. Caloni, M. Gerbino, M. Lattanzi, and **L. Visinelli**, *Hot axions revisited*, in preparation.

Technical reports

6. *Endorser*, European Strategy of Particle Physics,
Cosmoverse COST Action CA21136 [[hep-ph/2503.20432](#)] (2025).
5. *Contributor*, White Paper,
Cosmic WISPerS COST Action CA21106, in preparation.
4. R. X. Adhikari et al, *Report of the Topical Group on Cosmic Probes of Fundamental Physics for Snowmass 2021*
[[hep-ex/2209.11726](#)] (2022).
3. J. Jaeckel, G. Rybka, L. Winslow, et al, *Axion Dark Matter*
[[hep-ex/2203.14923](#)] (2022).
2. D. Antypas et al, *New Horizons: Scalar and Vector Ultralight Dark Matter*
[[hep-ex/2203.14915](#)] (2022).
1. D. Alesini et al, *KLASH Conceptual Design Report*
[[ins-det/1911.02427](#)] (2019).

Invited talks

65. 30/09/25 University of Sofia (BG), [Cosmological Tensions: Overview of Theory Solutions](#).
64. 09/09/25 Tsung-Dao Lee Institute (CHN), [New opportunities in axion cosmology](#).
63. 03/12/25 Università di Napoli, Napoli (IT), [Searching for Axion Dark Matter with Radio Telescopes](#).
62. 02/28/25 INFN Laboratori Nazionali di Frascati, Frascati (IT), Indirect detection of the QCD axion.
61. 01/16/25 INFN Università di Pisa, Pisa (IT), Indirect and direct detection of the QCD axion.
60. 12/30/24 ShanghaiTech University, Shanghai (CHN), Theoretical motivations and phenomenology of light bosons.
59. 10/25/24 Fudan University, Shanghai (CHN), The interplay between primordial BHs and particle DM.
58. 09/13/24 University of Torino (IT), Indirect Detection of the QCD Axion.
57. 06/04/24 University of Trento (IT), [Theoretical motivations for a light boson and its phenomenology](#).
56. 05/27/24 Institut D'Astrophysique de Paris (FR), [The interplay between primordial BHs and particle DM](#).
55. 03/28/24 Yunnan University (CHN), Axion Resonant Conversion in Neutron Star Magnetospheres.
54. 03/13/24 IBS Science and Culture Center, Daejeon (Korea), Indirect Detection of the QCD Axion: Resonant Conversion in Neutron Star Magnetospheres
53. 03/06/24 Shanghai Jiao Tong University (CHN), Indirect Detection of the QCD Axion: Resonant Conversion in Neutron Star Magnetospheres
52. 01/31/24 University of Louisiana at Lafayette (USA), [Tracing the footprints of dark matter](#)
51. 08/22/23 University of Texas at Austin (USA), [Axions as dark matter or dark radiation](#)
50. 07/18/23 University of Bologna (IT), [The interplay of primordial black holes, dark matter, and axions](#)
49. 05/16/23 Fudan University, Shanghai (CHN), [Dark radiation in the Universe](#)
48. 03/09/23 University of Napoli (IT), The interplay of primordial black holes, dark matter, and axions
47. 02/09/23 [University of Trento \(IT\)](#), The interplay of primordial black holes and particle dark matter
46. 02/06/23 University of Ferrara (IT), The interplay of primordial black holes and particle dark matter
45. 01/26/23 [DESY \(DE\)](#), Novel Cosmological Bounds on Thermally-produced Axion-like Particles
44. 05/20/22 [Chinese Academy of Science, Beijing \(CHN\)](#), Radio signals from axions conversion
43. 04/27/22 [KEK, Tsukuba \(JP\)](#), Radio signals from axions conversion
42. 04/08/22 Indian Institute of Technology, Mumbai (IN), [Superradiance evolution of black hole shadows](#)
41. 12/15/21 [Helsinki Institute of Physics \(FI\)](#), Axion miniclusters in the Milky Way
40. 10/14/21 SISSA, Trieste (IT), Radio signals from axion miniclusters colliding with neutron stars
39. 06/11/21 University of L'Aquila (IT), The population of axion miniclusters in the Galaxy

38. 04/26/21 Shanghai Jiao Tong University, Shanghai (CHN), Direct detection of dark energy
37. 02/17/21 Kavli IPMU, Tokyo (JP), [The interplay of primordial black holes and particle dark matter](#)
36. 11/04/20 Institute of Physics, Academia Sinica (TW), [Compact objects and dark matter](#)
35. 10/13/20 Undergraduate seminar, Colgate University (USA), *One dark matter candidate: the axion*
34. 06/04/20 International Institute of Physics, Natal (BR), *Radio and gravitational wave signals from cosmic axions* [[LINK to the YouTube video on the IIP channel: https://rb.gy/tsg0of](https://rb.gy/tsg0of)]
33. 05/11/20 Newton 1665 webinars series, *New physics out of the Shadow*
[[LINK to the YouTube video on the Newton1665 channel: https://www.youtube.com/watch?v=yCDUfzv8oKY](https://www.youtube.com/watch?v=yCDUfzv8oKY)]
32. 04/29/20 Latin American Webinars (LAWphysics) series, *Astrophysics with axion stars and miniclusters*
[[LINK to the YouTube video on the LAWphysics channel: https://www.youtube.com/watch?v=ilfmBKMgyH8](https://www.youtube.com/watch?v=ilfmBKMgyH8)]
31. 04/07/20 University of Texas at Austin (USA), [The future of light boson dark matter](#)
30. 03/02/20 DAMTP Institute of Astronomy, University of Cambridge (UK), *Light boson dark matter*
29. 12/20/19 National Institute Of Chemical Physics And Biophysics, Tallinn (ES), *Light boson dark matter*
28. 11/27/19 Fudan University, Shanghai (CHN), *Testing the rotational nature of the supermassive object M87**
27. 11/25/19 Shanghai Jiao Tong University, Shanghai (CHN), *Light bosons as dark matter candidates*
26. 11/07/19 Nordita, Stockholm (SE), [Testing the rotational nature of the supermassive object M87*](#)
25. 05/21/19 INFN Frascati, Rome (IT), [Axion miniclusters and implications for axion detection](#)
24. 05/10/19 Wayne State University, MI (USA), [Probing the Early Universe with Axion Physics](#)
23. 05/01/19 Kavli Institute for Cosmological Physics, IL (USA), [Probing the Early Universe with Axions](#)
22. 04/30/19 Argonne National Laboratory, IL (USA), [Probing the Early Universe with Axions](#)
21. 04/25/19 University of Michigan, MI (USA), *The Quest for the Axion*
20. 04/17/19 Barry University, FL (USA), *Introduction to Cosmology and Particle Physics*
19. 04/12/19 University of Florida, FL (USA), [Probing the Early Universe with Axion Physics](#)
18. 04/04/19 IFIC, Valencia (ES), [Probing the Early Universe with Axions](#)
17. 01/08/19 SISSA, Trieste (IT), *The Cold Dark Matter axion and Axion Stars*
16. 10/23/18 Nikhef Amsterdam (NL), [The Quest for the Axion](#)
15. 11/30/18 INFN Frascati, Rome (IT), [Motivations for the search of light axions](#)
14. 10/23/18 University of Bologna (IT), *Searching for Axions and the String Axiverse in the Cosmo*
13. 10/18/18 INFN Frascati, Rome (IT), *Searching for Axions in the Lab and in the Cosmo*
12. 04/11/18 Latin American Webinars (LAWphysics) series, [The axion in cosmology and astrophysics](#)
[[LINK to the YouTube video on the LAWphysics channel: https://www.youtube.com/watch?v=YWqVpPrpLjw](https://www.youtube.com/watch?v=YWqVpPrpLjw)]
11. 02/01/18 CEICO, Prague (CZ), *The Cold Dark Matter axion and Axion Stars*

10. 12/01/17 University of Turin (IT), *The Cold Dark Matter axion and Axion Stars*
9. 08/16/17 University of Oslo (NO), *Dark matter capture and neutrino observatories*
8. 06/15/17 University of Bologna (IT), *Dark matter capture and neutrino observatories*
7. 02/01/07 University of Michigan, MI (USA), *Axion cold dark matter, miniclusters, and axion stars*
6. 10/25/16 University of Helsinki (FI), *Axion cold dark matter, status and perspectives*
5. 01/21/16 University of Zaragoza (ES), *Axion cold dark matter, status and perspectives*
4. 06/03/13 CMCC Lecce (IT), *Impacts of Data Assimilation on the Global Ocean Carbonate System*
3. 06/15/11 University of Pisa (IT), *Axion cold dark matter in standard and non-standard cosmologies*
2. 10/12/10 University of New Mexico, NM (USA), *An integral equation for distorted-wave amplitudes*
1. 05/21/09 University of Bologna (IT), *Axion cold dark matter revisited*

Conference talks

57. 12/10-12 25: **Invited speaker**, [String & Cosmology Meeting](#), LAPTh, Annecy (France), *TBD*
56. 11/13-14 25: [Annual QGSKY Meeting](#), Catania (Italy), *New avenues to detect light bosons and gravitational waves*
55. 11/3-7 25: [TeV Particle Astrophysics \(TeVPA\) 2025](#), Valencia (Spain), [Searching for Axion Dark Matter with Radio Telescopes](#)
54. 11/3-7 25: **Invited speaker**, [National Space Forum 2025](#), Sofia (Bulgaria), *Constraints on Exotic Early-Universe Physics from the CMB*
53. 09/1-7 25: [FLASH Meeting](#), Laboratori Nazionali di Frascati (Roma), *Cosmic Dark Photon and Axion Radiation and Streams*
52. 09/1-7 25: [Particle Physics on Tabletops \(PPTT\)](#), Chengdu (CHN), *Tabletop Tests of Modified Gravity: Constraints and Complementarity with Astrophysical Probes*
51. 08/23-30 25: **Plenary talk**, XIX International Conference on Topics in Astroparticle and Underground Physics ([TAUP2025](#)), Xichang (CHN), [Axion cosmology](#)
50. 06/30-07/4 25 [Axions in Stockholm 2025](#), Stockholm (Sweden), *indirect detection of the QCD Axion*
49. 05/26-30 25 [Planck 2025](#), Padova (Italy), *Ultralight Black Holes as Astrophysical Particle Accelerators*
48. 03/10 25 [FLASH meeting](#), Frascati (Italy), *WP1-Theory outputs*
47. 11/26 24 [FLASH Kick-off meeting](#), Frascati (Italy), *FLASH kick-off meeting: Theory challenges*
46. 11/11-15 24 [The 8th Shanghai Symposium on Particle Physics and Cosmology](#), Tsung-Dao Lee Institute (China), [Ultralight Black Holes as Astrophysical Particle Accelerators](#)
45. 10/15-18 24 [Transient Phenomena and Physical Processes Around Supermassive Black Holes](#), Tsung-Dao Lee Institute (China), [New physics out of the shadow](#)
44. 09/03-06 24 [Plenary talk](#), 2nd General Meeting of the COST Action “Cosmic WISPer”, Istanbul (Turkey), *Direct and indirect detection of the QCD Axion*

43. 07/08-12 24 [15th International Workshop on the Identification of Dark Matter \(IDM 2024\)](#), GSSI L'Aquila (Italy), *Indirect Detection of the QCD Axion: Resonant Conversion in Neutron Star Magnetospheres*
42. 07/01-05 24 [Invisibles Workshop 2024](#), Bologna (Italy), *H_0 and cosmological tensions: An overview*
41. 05/15 24 [FLASH Technical Design Report \(TDR\)](#), Frascati (Italy), *Forecast reach of the FLASH cavity experiment at LNF*
40. 11/16-18 23 [The 9th China LHC Physics Workshop \(CLHCP2023\)](#), Shanghai (CHN), *Theoretical Motivations for Hidden Light Bosons*
39. 11/10-13 23 [International Symposium on Cosmology and Particle Astrophysics CosPA 2023](#), Hong Kong, *Direct detection experiments and light bosons*
38. 10/30-11/3 23 [IBS Conference on Dark World 2023](#), IBS Science and Culture Center, Daejeon (Korea), *Direct detection experiments and light bosons*
37. 09/15 23 [Dark Energy from Fundamental Theories to Observations](#), Frascati (Italy), *Direct detection experiments and light chameleons*
36. 09/11-14 23 [Plenary talk](#) on axions at [TeVPA 2023](#), Napoli (Italy), *The QCD axion: theory, phenomenology, and searches*
35. 06/19-21 23 [New Horizons in Primordial Black Hole physics \(NEHOP\)](#), Napoli (Italy), *Primordial black holes and particle dark matter are intimately intertwined*
34. 06/5-9 23 [Axion Across Boundaries](#), Galileo Galilei Institute, Arcetri (Italy), *Axions and inflation* [\[YouTube\]](#)
33. 02/23-24 23 [Kick-off Meeting of COST Action COSMIC WISPerS](#), INFN Frascati (Italy), *Axions and PBHs*
32. 11/18-20 22 [Particle Physics and Cosmology Symposium 2022](#), Shanghai (CHN), *Novel Cosmological Bounds on Thermally-produced Axion-like Particles*
31. 11/29-12/03 21 [Sixth Colombian Meeting on High Energy Physics](#), Santa Marta (CO), *Plenary speaker: Future probes of light bosons*
30. 10/12-13/21 [Cosmology Frontier in Particle Physics: Astroparticle Physics and Early Universe](#), NCTS NTU, *Axion miniclusters in the Milky Way*
29. 07/5-16/21 [Cosmology from Home 2021](#), *Direct detection of dark energy* [\[LINK to YouTube video\]](#)
28. 05/15/21 [TDLI International Workshop "Current Topics on Axion"](#), Shanghai Jiao Tong University, Shanghai (CHN), *Future probes of the axion landscape*
27. 10/13-16/20 [The 5th IBS-IFT-MultiDark Workshop](#), Institute for Basic Science (IBS), Daejeon (KR), *Recent and future developments of dark matter axion physics*
26. 09/24/20 [CoCo 2020: Cosmology in Colombia](#), Bogotá (CO), *Constraints on Reheating to SM Particles due to Large Effective Higgs Boson Mass*
25. 08/24/20 [Cosmology from Home 2020](#), *Axion Miniclusters: Tidal Disruption and Radioastronomy* [\[LINK\]](#)
24. 07/21/20 [13th International Workshop on the Identification of Dark Matter \(IDM 2020\)](#), Zurich (CH), *The future of Axion Physics*
23. 12/2-6/19 [TeVPA 2019](#), Sydney (AU), *Probing the Early Universe with Axion Physics*

22. 06/24-06/26 [Vera Rubin Fest](#), Washington DC (USA), *Axions*
21. 06/10-14/19 [Invisibles19](#), Valencia (ES), *Coordinating one of the panel discussion session*
20. 12/18/18 [SLAP 2018](#), King's College London (UK), *The Cold Dark Matter axion and Axion Stars*
19. 12/11/18 [The quest for New Physics](#), Instituto de Física Corpuscular (ES), *Axion Stars*
18. 09/05/18 [Invisibles18 Workshop](#), Karlsruhe Institute of Technology (DE), *Dilute and dense axion stars*
17. 06/20/18 [14th Patras Workshop](#), DESY Hamburg (DE),
The Higgs Boson can delay Reheating after Inflation
16. 06/12/18 [Preparing for Dark Matter Particle Discovery](#), Chalmers University of Technology, Goteborg (SE),
The Higgs Boson can delay Reheating after Inflation
15. 03/07/18 [Ultralight Dark Matter and Axions](#), University of Michigan (USA),
The parameter space of axion-like particles
14. 02/22/18 [UCLA Dark Matter 2018](#), UCLA (USA), *Axions in cosmology and astrophysics*
13. 08/31/17 [DavCO](#), CP³ Origin (DK), *Axions and ALPs as the Cold Dark Matter*
12. 08/04/17 [Self-interacting dark matter](#), Niels Bohr Institute (DK), *Sharpening Fuzzy Dark Matter*
11. 07/19/17 [Advances in Theoretical Cosmology in Light of Data](#) Nordita (SE), *Axion dark matter*
10. 12/06/16 [Axion Dark Matter workshop](#), Nordita (SE), *Axion dark matter, miniclusters, and axion stars*
9. 08/12/16 [11th International Workshop on the Identification of Dark Matter \(IDM 2016\)](#), Sheffield (UK),
Galactic Cold Dark Matter from First Principles
8. 09/07/15 [14th International Conference on Topics in Astroparticle and Underground Physics \(TAUP 2015\)](#),
Turin (IT) *Analytical expressions for the kinetic decoupling of WIMPs*
7. 11/19/14 [GEOCARBON Final Meeting](#), Paris (FR),
Summary contribution to GEOCARBON from Land and Ocean Components
6. 07/08/14 [NEMO Users Meeting](#), Grenoble (FR),
Assimilation of Physical and Carbonate Data on the Global Ocean Carbonate System
5. 10/15/10 [American Physical Society Four Corners Meeting](#), Ogden (USA),
An integral equation for distorted-wave amplitudes
4. 07/13/10 [PPC 2010 Conference](#), Turin (IT), *An integral equation for distorted-wave amplitudes*
3. 03/28/10 [SnowPac & SnowCluster 2010](#), Alta (USA), *Axion dark matter in non-standard cosmologies*
2. 07/02/09 [11th International Conference on Topics in Astroparticle and Underground Physics \(TAUP 2009\)](#),
Rome (IT), *Axion cold dark matter revisited*
1. 10/20/07 [American Physical Society Four Corners](#), Flagstaff (USA),
Oscillation amplitude for neutrino wave packets

Workshop attendance

- June 2025 [From Puzzles to New Insights in Fundamental Physics](#), Campagna (IT)
- May 2025 [CosmoVerse@Naples](#), Scuola Superiore Meridionale, Napoli (IT)
- May 2023 [Axions across boundaries between Particle Physics, Astrophysics, Cosmology and forefront Detection Technologies](#), Galileo Galilei Institute, Arcetri (IT)
- April 2017 [The 5th MCTP Spring Symposium](#), Ann Arbor, MI (USA)
- September 2014 [Data Assimilation in Ocean Physics](#), Trieste (Italy)
- June 2013 [Advanced School on Data Assimilation](#), Bologna (Italy)
- December 2009 [Focus week on indirect dark matter search](#), IPMU Tokyo (Japan)

Visiting Periods at Research facilities

Jan 7–31 2025	INFN Ferrara (IT)
Jun 09–12 2024	INFN Frascati (IT)
Feb 2–7 2024	University of Texas at Austin (TX)
Jan 17–23 2024	INFN Ferrara (IT)
Aug 21–31 2023	University of Texas at Austin (TX)
Jul 09–15 2023	INFN Frascati (IT)
Apr 20–31 2019	University of Michigan (MI)
Apr 10–20 2019	Barry University (FL)
Jan 20–31 2019	INFN Frascati (IT)
May 1–15 2017	Perimeter Institute (CA)
Feb 25–30 2017	Massachusetts Institute of Technology (MA)
Jan–Mar 2017	University of Michigan (MI)

Visitors hosted at the University of Salerno

12-31 October 2025	Kratika Mazde, AIP, Paris (FR)
9-16 June 2025	Hong-Yi Zhang, Tsung-Dao Lee Inst., Shanghai (CHN)
20-24 May 2025	Hanyu Cheng, Tsung-Dao Lee Inst., Shanghai (CHN)
27-30 April	Momchil Naydenov, Sofia University (BG)
10-16 April 2025	Yifan Chen, Niels Bohr Institutet, Copenhagen (DK)

Visitors hosted at the Tsung-Dao Lee Institute

Jan 2 2025	Prof. Giorgio Torrieri, University of Campinas (BR)
Dec 23-25 2024	Dr. Jiajun Chen, Chongqing Southwest University (CHN)
Dec 16-19 2024	Dr. Tucker Manton, Hangzhou University (CHN)
Dec 9 2024	Prof. Salvatore Capozziello, University of Napoli (IT)
Dec 9 2024	Dr. Qingyu Gan, University of Napoli (IT)
Nov 14–19 2024	Prof. Stefano Gariazzo, University of Torino (IT)
Oct 27–31 2024	Dr. Michele Tammaro, INFN Firenze (IT)
Apr-May 2024	Prof. Enrico Schiappacasse, San Sebastian University (CL)
Mar-May 2024	Andrea Boccia, University of Napoli & Scuola Superiore Meridionale (IT)
Apr 12 2024	Prof. Jessica Turner, University of Edinburg (UK)
Feb 25–27 2024	Prof. Alejandro Ibarra, Technical University of Munich (DE)
Feb 19–23 2024	Dr. Eleonora Di Valentino, University of Sheffield (UK)
Nov 7–11 2023	Dr. Florian Kühnel, Ludwig-Maximilians Universität (DE)
Sep 16–28 2023	Prof. Fabio Iocco, University of Napoli (IT)

Books

- June 2024 Enzo Pellegrino & **Luca Visinelli**, [Dove Abita il Tempo](#) (In Italian).
Published with Pendragon Editions in June 2024.
[Link to the book's website with Edizioni Pendragon](#)

Book presentation

- Feb 13 2025 Presentazione "Dove Abita il Tempo", Gallery 16, Bologna (Italy). [Link](#)
Jul 29 2024 Presentazione "Dove Abita il Tempo", Palazzo del Trono, Cetraro, CS (Italy). [Link](#)
May 31 2024 Presentazione "Dove Abita il Tempo", Sala Primavera, Loiano, BO (Italy). [Link](#)

Terza Missione (Outreach)

- Jan 2026 Lecture: *"Il cielo stellato sopra di noi: viaggio tra filosofia e astrofisica"*, Circolo San Carlo, Bologna (Italy).
- Jan 2026 Participant, European Night of Researchers, Villa Comunale, Salerno (Italy).
- Jan 22 2025 Lecture: *"Quando muore una stella"*, Circolo San Carlo, Bologna (Italy). [Link of the event](#)
- Jul 30 2024 Lecture, Giardino Palazzo del Trono, Cetraro, CS (Italy). [Link of the event](#)
- Jul 2022 [South physics observatory astronomy summer camp "Astronomy for Future Scientists"](#), The University of Utah. Host: Paul Ricketts.
- Jan 2022 Virtual interview with the online newspaper "Fanpage" on dark energy (in Italian) [\[Youtube link\]](#)
- September 2021 Interview for the podcast "co.scienza" (in Italian), aimed at young researchers [\[Link\]](#)
- August 2021 Public lecture "Le cinque ere dell'Universo e la vita su altri pianeti" (In Italian).
Youtube links: [PART 1](#) [PART 2](#)
- August 2020 Public lecture "Buchi neri e onde gravitazionali: La ricerca in Italia" (In Italian).
Youtube links: [PART 1](#) [PART 2](#)
- March 2016 Public lecture "Capire le onde gravitazionali" (In Italian), Bologna.
- November 2015 Public lecture "Physics for everybody!" (In Italian), Bologna.
- February 2013 Public lecture "Galileo, father of the scientific method" (In Italian), Bologna.
- April 2011 Public lecture "Dark Matters", The University of Utah, Math Department.

Press coverage and media appearance

- August 2025 “Neutrino masses are not likely to originate from interactions with dark matter”, [Phys.org](#)
- July 2025 “Can Dark Matter Explain Neutrino Mass? TDLI Team Presents Contradictory Evidence”, **Shanghai Jiao Tong University press release**
- October 2024 “Sulle tracce della quinta forza”, **University of Trento press release**
- September 2024 “Exploring a Fifth Force via the Trajectory of Asteroid Bennu”, **Shanghai Jiao Tong University press release**
- October 2021 “Signal From The XENON1T Experiment May Be A Hallmark Of Dark Energy”, **Forbes**
- September 2021 “Have we detected dark energy?”, [www.cam.ac.uk](#)
- June 2021 “Can we see dark energy from Earth? New experiments offer hope”, **Space.com**
- January 2021 “Black holes could reach 'stupendously large' sizes”, **Queen Mary University of London**
- November 2020 “Top ArXiv papers from week 48 2020, entry #2”, **Sunny Vagnozzi's blog**
- November 2020 “Top ArXiv papers from week 46 2020, entry #2”, **Sunny Vagnozzi's blog**
- September 2020 “'Stupendously large' black holes could grow to truly monstrous sizes”, **Space.com**
- September 2020 “Black holes - Do they grow stupendously large?”, **Astrobites.org**
- April 2020 “Interview with Luca Visinelli on “Il Messaggero” (In Italian)”, [ilmessaggero.it](#)
- September 2018 “Hunting for extra dimensions with gravitational waves”, **Oskar Klein Centre blog**
- August 2018 “Zoos, Swamplands and Cosmology”, **Astrobites.org**
- September 2017 “Interview with Luca Visinelli”, **Oskar Klein Centre blog**

Additional work experience

- 2015 **Editing work for JCAP and JHEP**, Sissa-Medialab publications, Trieste (Italy)
- 2015 – 2016 **High school teacher**, Public High School "E. Majorana", Bologna (Italy)
The work contract is available [[at this link](#)].
- 2015 – 2016 **High school teacher**, Private High School "M. Malpighi", Bologna (Italy)
- 2011 – 2016 **Private tutoring** in mathematics and physics for high school and university students.
- 2012 – 2013 **Quantitative Analyst**, Iason LTD, Milan [www.iasonltd.com](#).
I have implemented a set of numerical codes aimed at pricing defaultable coupon bonds in C/C++, Matlab, Excel. My personal contribution has been cited in the book:
A. Castagna and F. Fede, *Measuring and Managing Liquidity Risk*, Wiley (2013).
The work contract is available [[at this link](#)].
- 2011 – 2012 **Editor for high-school mathbooks**, Zanichelli Editore. [Textbook here](#).

Other Experiences

- 2015 - today **Voluntary affiliation, Italian Civil Protection Department**, *Loiano (Bologna)*, Italy.
- 2014 - 2016 **Elected as Town Councilor**, *Comune di Loiano (Bologna)*, Italy.

Professional references addressing my research activity

- Katherine Freese** **Full Professor (Postdoc supervisor),**
• Department of Physics, University of Texas at Austin
2515 Speedway, Austin TX 78712, United States of America.
Tel. +1 734 604 1325, Email: ktfreese@utexas.edu.
- Anne-Christine Davis** **Full Professor,**
Department of Applied Mathematics and Theoretical Physics, University of Cambridge
Wilberforce Road, Cambridge CB3 0WA, United Kingdom.
Tel. +44 012 2333 7878, Email: ad107@cam.ac.uk.
- Christoph Weniger** **Associate Professor (Postdoc supervisor),**
• GRAPPA, University of Amsterdam
Room C4.160, Science Park 904, 1098 XH Amsterdam, The Netherlands.
Tel. +31 20525 6294, Email: c.weniger@uva.nl.
- Paolo Gondolo** **Full Professor (Ph.D. supervisor),**
• Department of Physics and Astronomy, The University of Utah
115 S 1400 E #201, Salt Lake City, UT 84112-0830.
Tel. +1 801 581 77 88, Email: paolo.gondolo@utah.edu.

Professional references addressing my teaching activity

- Lars Bergström** **Professor and former director,**
Oskar Klein Centre, Stockholm University
Roslagstullsbacken 21 A 10691 Stockholm, Sweden.
Email: lbe@fysik.su.se.

Additional references

- Tsutomu T. Yanagida** **Emeritus Professor,**
Tokyo University, IPMU,
5-1-5 Kashiwanoha, Kashiwa, Chiba, 277-8583, Japan.
Email: tsutomu.tyanagida@sjtu.edu.cn.
- Frank Wilczek** **Full Professor,**
• Department of Physics, Massachusetts Institute of Technology
77 Massachusetts Ave, 6-301. Cambridge, MA 02139, United States of America;
• Department of Physics and Origins Project, Arizona State University
Tempe, AZ 25287, United States of America.
Tel. +1 617 253 0284, Email: wilczek@mit.edu.
Secretary [for reference letters]: Anne.Dominic@asu.edu.
- Javier Redondo** **Associate Professor,**
Theoretical physics dept., Zaragoza University,
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Tel. +34 876 553312, Email: jredondo@unizar.es.

Autorizzo il trattamento dei miei dati personali presenti nel curriculum vitae ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 e del GDPR (Regolamento UE 2016/679).

October 29, 2025

Luca Visinelli