

# LUCA VISINELLI

*Tenure-track associate professor,  
Shanghai Jiao Tong University;  
Fellow, T. D. Lee Institute (TDLI)*

+39 349 470 3231  
✉ [luca.visinelli@sjtu.edu.cn](mailto:luca.visinelli@sjtu.edu.cn)  
📄 [lucavisinelli.com](http://lucavisinelli.com)  
📱 [luca.visinelli](https://www.linkedin.com/in/luca.visinelli)

**Personal website:** [lucavisinelli.com](http://lucavisinelli.com); **Institutional website:** [tdli.sjtu.edu.cn](http://tdli.sjtu.edu.cn)

## 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](#)  
Dichiarazioni e pergamena di dottorato accessibili [\[a questo link\]](#).  
Equipollente 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

- 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

- 2020-2031 **Abilitazione Scientifica Nazionale** for the role of "Professore universitario di Seconda 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 signed by Prof. Frank Wilczek 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. Fundings: 26.318,70 EUR/year. Grant contract accessible [[at this link](#)].
- Fall 2006 Undergraduate Student Award, University of Bologna. Fundings: approx. 2.000 EUR/year.

---

## Group Grants Awarded

- 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

- Fall 2020 [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-today **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-today **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 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

- 2021-today **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-today **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](http://www.webofscience.com) available [\[at this link\]](#)

---

## Service in Editorial Boards

- 2020-2022 Guest editor for the Special Issue of the journal Universe: “*Dark Matter and Dark Energy: Particle Physics, Cosmology, & Experimental Searches*”, to appear in 2023.  
Link: [www.mdpi-com/journal/universe/special\\_issues/DM\\_DE](http://www.mdpi-com/journal/universe/special_issues/DM_DE).

---

## Organization of international conferences

- 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](mailto:bradley.johnson@virginia.edu).  
We plan to submit 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](mailto:claudio.gatti@lnf.infn.it).  
Since Summer 2024, I am one of the coordinators for the theory section of the technical design report.

---

## Teaching Experience

- 2025 Observational Astronomy, Shanghai Jiao Tong University, Shanghai (China)
- 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 [\[at this link\]](#).
- 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, $\text{\LaTeX}$ , 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

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

---

## Mentoring of undergraduate and master students

- 2023-today I am mentoring **Qixuan Xu** during a leap year at the Tsung-Dao Lee Institute (China).  
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-today 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.

## Summary of publication records

86 papers (of which 74 published/accepted on top-tier JCR journals), **h-index=42**;  
8800+ total citations, 18 (37) papers with 100+ (50+) citations; 118.5 average citations  
per refereed paper (INSPIRE statistics as of October 5, 2024).  
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](#)

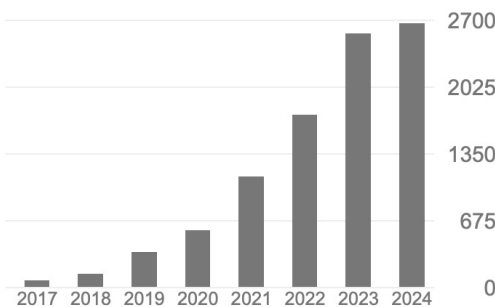
**ArXiv** My article list on <https://arxiv.org>

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

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

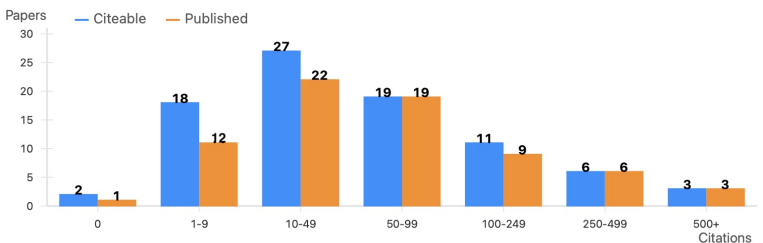
## Summary of statistics as of October 5, 2024

	All	Since 2019
Citations	9523	9079
h-index	45	44
i10-index	67	65



Citations per year (Google Scholars)

	Citeable ②	Published ②
Papers	86	72
Citations	8,887	8,416
h-index ②	44	42
Citations/paper (avg)	103.3	118.5



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>

74. 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).
73. **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).
72. Z. Yin and **L. Visinelli**, *Axion star condensation around primordial black holes and microlensing limits*, *JCAP* **2410**, 013 [[gr-qc/2404.10340](#)] (2024).
71. H. Cheng and **L. Visinelli**, *Future targets for light gauge bosons from cosmic strings*, *Phys. Dark Univ.* **46**, 101667 [[hep-ph/2408.16334](#)] (2024).
70. 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).
69. 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).
68. F. Iocco and **L. Visinelli**, *Compatibility of JWST results with exotic halos*, *Phys. Dark Univ.* **44**, 101496 [[astro-ph/2403.13068](#)] (2024).
67. 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).
66. 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).
65. 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).
64. 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).
63. 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).
62. 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).
61. 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).
60. 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).



59. G. Montefalcone, V. Aragam, **L. Visinelli**, and K. Freese, *Observational constraints on warm natural inflation*, *JCAP* **2303**, 002 [[gr-qc/2212.04482](#)] (2023).
58. 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).
57. K. Mazde and **L. Visinelli**, *The interplay between the dark matter axion and primordial black holes*, *JCAP* **2301**, 021 [[astro-ph/2209.14307](#)] (2023).
56. 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).
55. 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).
54. 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).
53. 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).
52. 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).
51. S. Vagnozzi and **L. Visinelli**, *Note on fundamental physics tests from black hole imaging*, *Res. Notes AAS* **6**, 106 [[astro-ph/2205.11314](#)] (2022).
50. **L. Visinelli** and H. Terças, *B-field induced mixing between Langmuir waves and axions*, *Phys. Rev. D* **105**, 096024 [[hep-ph/1807.06828](#)] (2022).
49. 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).
48. R. Roy, S. Vagnozzi, and **L. Visinelli**, *Superradiance evolution of black hole shadows revisited*, *Phys. Rev. D* **105**, 083002 [[astro-ph/2112.06932](#)] (2022).
47. B. Barman, N. Bernal, N. Ramberg, and **L. Visinelli**, *QCD Axion Kinetic Misalignment without Prejudice*, *Universe* **8**(12), 634 [[hep-ph/2111.03677](#)] (2022).
46. **L. Visinelli**, *Boson Stars and Oscillatons: A Review*, *Int. J. Mod. Phys. D* **30** 15, 2130006 [[gr-qc/2109.05481](#)] (2021).
45. 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).
44. 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).
43. 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).
42. 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).

41. 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).
40. 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).
39. 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).
38. 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).
37. 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).
36. 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).
35. 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).
34. E. di Valentino *et al*, *Cosmology Intertwined III:  $f\sigma_8$  and  $S_8$* , *Astropart. Phys.* **131**, 102604 [[astro-ph/2008.11285](#)] (2021).
33. E. di Valentino *et al*, *Cosmology Intertwined II: The Hubble Constant Tension*, *Astropart. Phys.* **131**, 102605 [[astro-ph/2008.11284](#)] (2021).
32. E. di Valentino *et al*, *Cosmology Intertwined I: Perspectives for the Next Decade*, *Astropart. Phys.* **131**, 102606 [[astro-ph/2008.11283](#)] (2021).
31. 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).]
30. 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).
29. 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).
28. **L. Visinelli** and J. Redondo, *Axion Miniclusters in Modified Cosmological Histories*, *Phys. Rev. D* **101**, 023008 [[hep-ph/1808.01879](#)] (2020).
27. **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).
26. T. Tenkanen and **L. Visinelli**, *Axion dark matter from Higgs inflation with an intermediate  $H_*$* , *JCAP* **1908**, 033 [[astro-ph/1906.11837](#)] (2019).
25. 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).
24. 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).

23. S. Vagnozzi and **L. Visinelli**, *Hunting for extra dimensions in the shadow of M87\**, *Phys. Rev. D* **100**, 024020 [[gr-qc/1905.12421](#)] (2019).
22. 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).
21. 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).
20. **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).
19. 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).
18. 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).
17. **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).
16. **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).
15. **L. Visinelli**, *(Non-)thermal production of WIMPs during kination*, *Symmetry* **10**, 546 [[astro-ph/1710.11006](#)] (2018).
14. **L. Visinelli**, *Light axion-like dark matter must be present during inflation*, *Phys. Rev. D* **96**, 023013 [[astro-ph/1703.08798](#)] (2017).
13. 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).
12. **L. Visinelli**, *Observational Constraints on Monomial Warm Inflation*, *JCAP* **1607**, 054 [[astro-ph/1605.06449](#)] (2016).
11. **L. Visinelli**, *Condensation of Galactic Cold Dark Matter*, *JCAP* **1607**, 009 [[hep-ph/1509.05871](#)] (2016).
10. **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).
9. **L. Visinelli** and P. Gondolo, *Kinetic decoupling of WIMPs: analytic expressions*, *Phys. Rev. D* **91** 8, 083526 [[astro-ph/1501.02233](#)] (2015).
8. **L. Visinelli**, *Neutrino flavor oscillations in a curved space-time*, *Gen. Rel. Grav.* **47** 5, 62 [[gr-qc/1410.1523](#)] (2015).
7. **L. Visinelli**, *Cosmological perturbations for an inflaton field coupled to radiation*, *JCAP* **1501**, 005 [[astro-ph/1410.1187](#)] (2015).
6. **L. Visinelli**, S. Masina, M. Vichi, and A. Storto, *Impacts of Physical Data Assimilation on the Global Ocean Carbonate System*, *Biogeosciences Discussions* **11** (4), 5399-5441 (2014).

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).

## Proceedings

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 currently under review

3. L. Walters *et al* (with **L. Visinelli**), *Searching for Axions in the Andromeda Galaxy with the Green Bank Telescope*, submitted to *Phys. Rev. D* [[astro-ph/2407.13060](#)] (2024).
2. A. Boccia, F. Iocco, and **L. Visinelli**, *Constraining the primordial black hole abundance through Big-Bang nucleosynthesis*, submitted to *Phys. Rev. D* [[astro-ph/2405.18493](#)] (2024).
1. **ngEHT** Collaboration (with **L. Visinelli**), *Fundamental Physics Opportunities with the Next-Generation Event Horizon Telescope*, Submitted to *Living Rev. Relativ.* [[astro-ph/2312.02130](#)] (2024).

## Articles in preparation

3. Q. Xu, S. Vagnozzi, and **L. Visinelli**, *Superradiance and light bosons*, in preparation.
2. X. Chu and **L. Visinelli**, *Gravitational wave detection*, in preparation.
1. Y. Tang, **L. Visinelli**, and Katherine Freese, *Deriving the dark matter abundance for the Yang-Mills axion*, in preparation.

## Technical reports

6. White Paper, Cosmoverse COST Action CA21136, in preparation.
5. 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

59. 10/25/24 Fudan University, Shanghai (CHN), Constraining a fifth force and ultralight dark matter with asteroidal tracking data
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](#)]

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=yCDUfv8oKY>]
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>]
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=YWqVpPrLjw>]
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

48. 01/12-17/25 [Prospects for the String Axiverse](#), Banff International Research Station (Canada), *TBD*
47. 10/15-18/22 [Transient Phenomena and Physical Processes Around Supermassive Black Holes](#), Tsung-Dao Lee Institute (China), *TBD*
46. 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*
45. 07/08-12/24 [IDM 2024](#), GSSI L'Aquila (Italy), *Indirect Detection of the QCD Axion: Resonant Conversion in Neutron Star Magnetospheres*
44. 07/01-05/24 [Invisibles Workshop 2024](#), Bologna (Italy),  *$H_0$  and cosmological tensions: An overview*
43. 06/17-20/24 [New Horizons in Primordial Black Hole physics \(NEHOP\)](#), Durham (UK), *Searching for high-frequency gravitational waves with resonant cavities*
42. 05/15/24 [FLASH Technical Design Report \(TDR\)](#), Frascati (Italy), *Forecast reach of the FLASH cavity experiment at LNF*
41. 04/09-11/24 [Gravitational Waves and the early Universe Workshop](#), Beijing (CHN), *Searching for high-frequency gravitational waves with resonant cavities*
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 WISPer](#), 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 [IDM2020](#), 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](#), CP<sup>3</sup> 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 [IDM2016](#), Sheffield (UK), *Galactic Cold Dark Matter from First Principles*
8. 09/07/15 [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 [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

- |                |   |
|----------------|---|
| May 2023       | <a href="#">Axions across boundaries between Particle Physics, Astrophysics, Cosmology and forefront Detection Technologies</a> , Galileo Galilei Institute, Arcetri (IT) |
| April 2017     | <a href="#">The 5th MCTP Spring Symposium</a> , Ann Arbor, MI (USA)   |
| September 2014 | <a href="#">Data Assimilation in Ocean Physics</a> , Trieste (Italy)  |
| June 2013      | <a href="#">Advanced School on Data Assimilation</a> , Bologna (Italy)  |
| December 2009  | <a href="#">Focus week on indirect dark matter search</a> , IPMU Tokyo (Japan)  |

## Visitors hosted at the Tsung-Dao Lee Institute

- |                |   |
|----------------|---|
| Nov 14–19 2024 | Prof. Stefano Gariazzo, University of Torino (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 | Prof. 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 al sito Mondadori Store](#)

---

## Outreach: Presenting science to popular audience

- July 2022 [South physics observatory astronomy summer camp "Astronomy for Future Scientists"](#), The University of Utah. Host: Paul Ricketts.
- January 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.

---

## Visiting researcher

- 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)
- Mar 06–07 2023 Università di Salerno (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)

---

## Press coverage and media appearance

- 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](http://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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto:wilczek@mit.edu).  
Secretary [for reference letters]: [Anne.Dominic@asu.edu](mailto:Anne.Dominic@asu.edu).
- Javier Redondo** **Associate Professor,**  
Theoretical physics dept., Zaragoza University,  
C/ Pedro Cerbuna 12 E-50009, Zaragoza, Spain.  
Tel. +34 876 553312, Email: [jredondo@unizar.es](mailto: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 5, 2024

Luca Visinelli