Andrea Celentano Curriculum Vitae

Il sottoscritto Andrea Celentano, nato a Genova (GE) il 05/05/1986, c.f. CLNNDR86E05D969P e residente a Genova (GE), in Via Castagnola n.20, consapevole delle responsabilità penale prevista, dall'art. 76 del D.P.R. 445/2000, per le ipotesi di falsità in atti e dichiarazioni mendaci ivi indicate:

DICHIARA

che le informazioni sotto riportate sono veritiere.

Dr. Andrea Celentano
PhD in Physics, Genoa University, March 2014

1 Personal Data

Birth date and place: OMISSIS
Fiscal code: OMISSIS
Citizenship: Italian
Home address: OMISSIS
Telephone: OMISSIS
OMISSIS
Email: andrea.celentano@ge.infn.it
ORCID: orcid.org/0000-0002-7104-2983

2 Current and previous positions

- 2024-now: Permament staff researcher (II level) at INFN, Sezione di Genova. Winner of INFN 26076/2023 selection, *second classified*.
  Research interests: nuclear and subnuclear particle physics (hadron physics and light dark matter search at accelerators). Design, construction, and execution of small- and medium-scale experiments at accelerators.
- 2024-now: Adjoint professor, Genova University, Physics department.
- 2017-2024: Permanent staff researcher (III level) at INFN, Sezione di Genova. Winner of INFN 128221/2016 selection, *first classified out of 717 participants.*
- 20218-2022: Adjoint professor, Genova University, Mechanical and Naval Engineering department.
- 2014-2016: PostDoc at INFN-Genova.

3 Education

March 2014: PhD in Physics, University of Genoa.
Thesis title: "The Forward Tagger detector for the CLAS12 experiment at Jefferson Laboratory and the MesonEx experiment"
Advisor: Prof. Mauro Taiuti, Dott. Marco Battaglieri
External Advisor: Prof. Adam Szczepaniak

October 2010: M. Sc. in Physics, University of Genoa.
Thesis title: "Neutron production from a thick Berillium target"
Advisor: Prof. Giovanni Ricco, Dott. Marco Ripani

External Advisor: Dott. Maurizio Lo Vetere
Final grade: 110/110 cum laude

4 Current and previous positions

- 2017-Current: Permanent staff researcher at INFN-Genova, Gruppo 3
  - Winner of INFN 18221/2016 national selection
- 2015-2016: Post-doctoral researcher at INFN-Genova, Gruppo 5, Optotracker project
- 2014: Post-doctoral researcher at INFN-Genova, Gruppo 3, EU-FP7 HP3 project

5 Research statement summary

I began my scientific activity in the field of hadronic spectroscopy, an experimental tool used to investigate the mechanism by which nucleons acquire mass from their nearly massless constituents-quarks and gluons. Subsequently, I diversified my research interests by entering the field of light dark matter (LDM) searches with accelerator-based experiments, which today represents my main scientific activity. Working in small- and medium-scale experiments has allowed me to engage with all aspects of a particle physics experiment, from design to execution to final data analysis. My experience in these fields is also demonstrated by my scientific achievements (publications and invited talks), leadership roles, and ability to attract external funding.

My activity in the field of hadronic physics has been ongoing since 2011 within the CLAS and CLAS12-MesonEx experiments at Jefferson Laboratory (JLab), for which I am the Principal Investigator of several analyses. The most significant result I obtained is the first measurement of the reaction $\gamma p \to p\pi^0\eta$, one of the "golden channels" for the search for exotic mesons, i.e., states with quantum numbers J^{PC} incompatible with the constituent quark model: the pseudoscalar nature of the two mesons implies that any resonance in the $\pi^0\eta$ system measured with orbital angular momentum $L = 1$ must be exotic in nature. My analysis led to the first measurement of the differential cross section, from which I extracted the dominant contribution of the reaction channel $\gamma p \to a_2(1320)p$, a benchmark for any subsequent partial wave analysis of the reaction. The comparison of the cross section with a theoretical model developed in collaboration with the "JPAC" group at JLab confirmed the diffractive nature of the corresponding production mechanism. I published this work as first author in Phys. Rev. C, Rapid Communications section, in 2020. In the context of long-term developments in hadronic physics, I have been involved since 2020 in the preparation phase of the future Electron-Ion Collider (EIC) experiment, contributing to the identification and study of key reactions of interest for a hadronic spectroscopy program in the heavy quark sector.

Subsequently, since 2014 I have been working in the field of light dark matter (LDM) searches at accelerators. My most important scientific achievements in this context include the approval in 2018 of the "Beam Dump Experiment" (BDX) at JLab with the highest scientific rating and, above all, the awarding in 2020 of an ERC Starting Grant for the "POKER" experiment. The objective of POKER is to perform a first "missing energy" measurement with a 100 GeV positron beam impinging on a thick active target at the H4 beamline at CERN, exploiting for the first time the resonant electron-positron annihilation mechanism for LDM production. POKER will allow the exploration of a previously uncharted region in the LDM parameter space, with the potential to directly measure, in case of signal evidence, the mass of the new particles via the shape of the missing energy distribution.

In the various experimental contexts I have participated in, I have always carried out intensive R&D work on detectors, thanks in part to the comprehensive training I received while working on the development of the "Forward Tagger" detector for MesonEx and its integration into CLAS12. In this context, one of my most significant achievements was obtaining INFN-Gruppo5 funding in 2015 for young researchers for the "OptoTracker" project, aimed at verifying the feasibility of

a new approach to reconstructing the track of a charged particle propagating through a scintillating material, using the optical signal it emits. More recently, since 2018 I have focused on the development of new "triggerless" data acquisition systems. Starting from the specific case of the BDX experiment, I contributed to the construction of a prototype system and its experimental validation through beam tests. My appointment in 2020 as coordinator of the "Readout and DAQ" working group in the context of the preparation of the "EIC Yellow Report" programmatic document attests to the recognition of my role in this sector by the hadronic physics community.

Finally, I have solid experience as a coordinator of projects and research groups. I served as national INFN coordinator for the "OptoTracker" project (2015-2016, 141 k€), and I was co-coordinator of the INFN "PESCE" project (2019-2021, 80 k€). Lastly, I am the principal investigator of the ERC Starting Grant 2020 "POKER" project (December 2020 - November 2025, 1.484 M€) and of the ancillary MUR project "SOCIO" (December 2022 - November 2027, 298 k€).

6 Abilitazione scientifica nazionale

- Settore concorsuale 02/A1, prima fascia, maggio 2023
- Settore concorsuale 02/A1, seconda fascia, dicembre 2017

7 Scientific collaborations and responsibility roles

I am member of the following scientific collaborations: CLAS (2011-2024), HPS (2012-present), BDX (2014-present), EIC (2018-2023), NA64 (2020-present)
Responsibility roles:

- 2022-present: NA64 experiment "collaboration board" member and responsible of the NA64 experiment at INFN-Genova
- 2022-present: Principal investigator of the FARE-MUR project "SOCIO".
- 2020-present: Principal investigator of the ERC Starting Grant 2020 "POKER".
- 2018-2022: INFN local responsible of the EIC experiment.
- 2014-present: Spokeperson of the "Beam Dump eXperiment" (BDX) at Jefferson Laboratory.
- 2014-present: Member of the "Publications and Presentations Committee" of the HPS experiment.
    - 2018-present: Chair of the committee
- 2015-2016: PI of the "OptoTracker" experiment
    - 2014: Winner of INFN-Gruppo 5 call for new young scientists projects
- 2014-Present: Responsible of the LED monitoring system of the HPS - ECal detector.
- 2013-2024: Responsible of the DAQ system for the CLAS12 - Forward Tagger Calorimeter.

8 Research Funding as Principal Investigator

- 2022, FARE-MUR call, project "SOCIO": 294 k€.
- 2020, ERC Starting Grant, project "POKER": 1.484 M€.
- 2016, INFN call for newly hired researchers: 20 k€.
- 2014, INFN-Gruppo 5 call for young researchers: 176 k€.

Total funding obtained as Principal Investigator: 2.01 M€.

9 Scientific Metrics

Publications (source: INSPIRE, July 2025, peer-reviewed journal articles only):

- Number of publications: 155
- Total number of citations: 6898
- h-index: 43

10 Academic Experience

10.1 Official courses

- **AY 2024/2025, 2025/2026**: Lecturer for the course "Neutrons and nuclear reactors physics" (University of Genoa, Masters's Degree in Physics)
- **AY 2018/2019, 2019/2020, 2020/2021, 2021/2022**: Lecturer for the course "General Physics - Module A" for Mechanical Engineering (University of Genoa, Bachelor's Degree in Mechanical Engineering)
- **AY 2016/2017**: Lecturer for the course "General Physics - Module B" for Naval Engineering (University of Genoa, Bachelor's Degree in Naval Engineering)

10.2 Teaching Support

- **AY 2015/2016, 2016/2017, 2017/2018**: Teaching assistant (exercise sessions) for the course "General Physics - Module B" for Biomedical Engineering (University of Genoa, Bachelor's Degree in Biomedical Engineering)
- **AY 2012/2013**: Teaching assistant (exercise sessions) for the course "General Physics 1" for Electronic Engineering (University of Genoa, Bachelor's Degree in Electronic Engineering)
- **AY 2011/2012**: Teaching assistant (exercise sessions) for the course "General Physics 1" for Electrical Engineering (University of Genoa, Bachelor's Degree in Electrical Engineering)

10.3 Student Supervision

- Supervisor of four Master's theses in Physics: L. Marsicano, S. Vallarino, P. Bisio, M. Spreafico (University of Genoa, Master's Degree in Physics)
- Supervisor of one PhD thesis in Physics: P. Bisio (University of Genoa)

11 Conference Organization and Participation

11.1 Conference Organization

- **LDMA 2025**, Light Dark Matter @ Accelerators, Genova, April 2025. Coordinator of the local organizing committee.
- **LDMA 2019**, Light Dark Matter @ Accelerators, Venice, November 2019. Coordinator of the local organizing committee.
- **LDMA 2017**, Light Dark Matter @ Accelerators, La Biodola, May 24-28, 2017. Member of the local organizing committee.
- **LDMA 2015**, Light Dark Matter @ Accelerators, Camogli, June 24-26, 2015. Member of the local organizing committee.

11.2 Conference and Workshop Participation

11.2.1 Invited Talks

- **PAW 2024**, *Physics at AMBER international workshop*, CERN, 18-20 March 2024. Talk: "Dark Sector searches at NA64".
- **WIFAI 2023**, Rome, November 8-10, 2023. Talk: "Dark Sector searches at NA64".
- **Heraeus Seminar 2021 "Light Dark Matter Searches"**, online, June 8-11, 2021. Talk: "Light Dark Matter Search with the BDX experiment at Jefferson Laboratory".

- **SIF 2019**, *CV National Congress of the Italian Physical Society*, GSSI (L'Aquila), September 23-27, 2019. Talk: "Dark Sector Searches at Jefferson Laboratory".
- **Next Frontiers in the Search for Dark Matter**, GGI (Florence), September 23-27, 2019. Talk: "An overview of experiments aiming to investigate the dark sector making use of electron beams".
- **INFN 2018**, *Fourth National Meeting on Nuclear Physics*, INFN-LNS (Catania), November 7-9, 2018. Talk: "First Results from Jefferson Lab with the Upgraded 12 GeV Electron Beam".
- **MC4BSM 2018**, Durham, April 18-21, 2018. Talk: "Monte Carlo Simulations for Dark Matter Searches in BDX".
- **Excited QCD 2017**, Sintra, May 7-13, 2017. Talk: "Photoproduction of exotic states".
- **US Cosmics Vision 2017**, *New Ideas in Dark Matter*, Washington DC, March 23-25, 2017. Talk: "The BDX experiment at Jefferson Laboratory".
- **BEACH 2016**, *XII International Conference on Hyperons, Charm and Beauty Hadrons*, GMU, VA, USA, June 12-18, 2016. Talk: "Dark sector searches at Jefferson Laboratory".
- **Dark Sectors 2016**, *Future Opportunities to Explore Light Dark Matter, Dark Photons and Other Hidden Sector Physics*, SLAC, April 28-30, 2016. Talk: "The BDX experiment at Jefferson Laboratory".
- **Spectroscopy of Resonances and QCD**, *ECT* Workshop*, Trento, February 8-12, 2016. Talk: "Spectroscopy Networking".
- **PWA8-ATHOS3**, *The International Workshop on Partial Wave Analysis for Hadron Spectroscopy*, Ashburn, April 13-17, 2015. Talk: "Application of the Veneziano model to light meson decays".
- **DHF 2014**, *International Conference on Dark Matter, Hadron Physics and Fusion Physics*, Messina, September 24-26, 2014. Talk: "The BDX experiment".
- **BEACH 2014**, *XI International Conference on Hyperons, Charm and Beauty Hadrons*, Birmingham, July 21-26, 2014. Talk: "The HPS experiment at Jefferson Laboratory".
- **MENU 2013**, *13th International Conference on Meson-Nucleon Physics and the Structure of the Nucleon*, Rome, September 30 - October 4, 2013. Talk: "The Forward Tagger Facility for low Q^2 experiments with CLAS12 at Jefferson Laboratory".
- **Excited QCD 2013**, Sarajevo, February 3-9, 2013. Talk: "Meson Spectroscopy at CLAS12".
- **International Seminar on Strong and Electromagnetic Interactions in High Energy Collisions**, Messina, October 12, 2012. Talk: "Meson Spectroscopy at JLab@12 GeV".

11.3 Other Contributions

- **ICHEP 2022**, Bologna, July 6-13, 2022. Talk: "The BDX experiment at Jefferson Laboratory".
- **SIF 2015**, *CI National Congress of the Italian Physical Society*, Rome, September 21-25, 2015. Talk: "The OptoTracker experiment".
- **What Next LNF**, *Perspectives of Fundamental Physics at the Frascati Laboratory*, Frascati, November 10-11, 2015. Talk: "BDX@LNF".
- **LTS1 2014**, *Workshop on the Long-Term Strategy of INFN-CSN1: The Next 10 Years of Accelerator-Based Experiments*, La Biodola, May 22-24, 2014. Talk: "Dark Matter Searches at Jefferson Laboratory".

- **SIF 2013**, *XCIX National Congress of the Italian Physical Society*, Trieste, September 23-27, 2013. Talk: "The HPS experiment at Jefferson Laboratory".
- **SIF 2012**, *XCIIX National Congress of the Italian Physical Society*, Naples, September 23-27, 2012. Talk: "Neutron production from a thick beryllium target".
- **Gordon Research Conference 2012**, *Photonuclear Reactions*, Holderness School, NH, USA, August 5-10, 2012. Poster: "The Forward Tagger detector for the MesonEx experiment at Jefferson Laboratory".

12 Awards

- 2012: "Orso Maria Corbino" award for young researchers from the Italian Physical Society

Curriculum Vitae

Informazioni personali

Nome	Stefania Farinon
indirizzo	Via Dodecaneso 33 – 16146 ITALY
telefono	+
e-mail	
nazionalità	italiana
Data di nascita	

Formazione e occupazione

Dal 1/1/2021 ad oggi	Dirigente Tecnologo presso l'INFN
Dal 2007 al 2020	Primo Tecnologo presso l'INFN
Dal 2001 to 2006	Tecnologo presso l'INFN
Dal 1996 to 2001	Posizione a tempo determinato nell'INFN per una collaborazione tecnica nell'ambito dell'esperimento CMS, con particolare riguardo allo studio dei disturbi e del comportamento meccanico della bobina superconduttrice.
dal 1994 al 1996	Borsa di Studio INFN per la progettazione magnetica meccanica e termica del solenoide superconduttore CMS
1994	Laurea in Fisica discutendo la tesi "Studio teorico e sperimentale della risposta spettrale di superconduttori esposti a campi magnetici variabili"

Progetti di ricerca e collaborazioni scientifiche

dal 2022 ad oggi	Posizione: responsabile delle attività della Sezione di Genova dell'INFN dell'esperimento SIG (Superconducting Ion Gantry) Progettazione meccanica e supervisione dell'assemblaggio di un dimostratore presso i laboratori LASA dell'INFN (Mi).
dal 2019 ad oggi	Posizione: responsabile nazionale dell'esperimento INFN FalconD Progettazione e supervisione della costruzione di un dimostratore di dipolo ad alto campo in Nb_3Sn
dal 2014 ad oggi	Posizione: responsabile nazionale dell'esperimento INFN D2 Progettazione e supervisione della costruzione di un modello, di un prototipo e della serie di sei magneti del dipolo superconduttore D2 per l'upgrade ad alta luminosità del Large Hadron Collider al CERN
2015-2019	Posizione: responsabile delle attività INFN del WP5 Progettazione di un dipolo superconduttore da 16 T in Nb_3Sn per il Future Circular Collider al CERN nell'ambito dell'esperimento europeo EuroCircol.
2014-2016	Posizione: responsabile della progettazione Progettazione e costruzione di un calorimentro per la misura ad altissima accuratezza del calore generato dalla sorgente di antineutrini 100kCi ^{144}Ce–^{144}Pr per l'esperimento INFN SOX
2014-2015	Posizione: progettista Progettazione e costruzione del primo prototipo sui 27 moduli del solenoide di trasporto per l'esperimento Mu2e al Fermilab.
2013-2021	Posizione: collaborazione Partecipazione agli studi sul rumore elettromagnetico e newtonianiano per l'upgrade del rivelatore di onde gravitazionali Virgo

2013-2015	Posizione: progettista Progettazione di un magnete toroidale superconduttore per la schermatura di astroparticelle in missioni interplanetarie con equipaggio per l'esperimento europeo SR2S (Space Radiation Superconductive Shield).
2011-2013	Posizione: collaborazione alla progettazione e ai test Progettazione, costruzione e test di un modello di quadrupolo superconduttore per la regione di interazione della SuperB factory.
2005-2010	Posizione: responsabile della progettazione meccanica Progettazione e costruzione di un dipolo superconduttore a rampa veloce per il sincrotrone FAIR SIS300.
1995-2005	Posizione: progettista e responsabile della Qualità Progettazione e costruzione del solenoide superconduttore CMS al CERN LHC.
2005-2007	Posizione: responsabile delle attività della Sezione di Genova dell'INFN Sviluppo di un conduttore di Nb_3Sn ad alte prestazioni per il progetto europeo NED.
2003-2004	Posizione: responsabile delle attività della Sezione di Genova dell'INFN Progettazione del solenoide superconduttore per il ciclotrone SCENT (Superconducting Cyclotron for Exotic Nuclei and Therapy) presso il Laboratorio LNS dell'INFN.
2001-2003	Posizione: progettista Progettazione di un gantry a ioni pesanti per la radioterapia oncologica al centro CNAO.
1994-1996	Posizione: progettista Progettazione e costruzione del solenoide superconduttore BABAR per l'impianto SLAC di Stanford.

Incarichi editoriali

dal 2005 ad oggi	Editore della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti gli atti della Applied Superconductivity Conference e della Magnet Technology Conference.
dal 2019 ad oggi	Editore dei numeri regolari della rivista "IEEE Transaction on Applied Superconductivity"

Incarichi speciali:

2005	Chief Editor della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti i proceeding della 19th Magnet Technology Conference.
2007	Chief Editor della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti i proceeding della 20th Magnet Technology Conference.
2009	Lead Editor della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti i proceeding della 21st Magnet Technology Conference
2010	Chief Editor della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti i proceeding della 2010 Applied Superconductivity Conference.
2011	Chief Editor della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti i proceeding della 22nd Magnet Technology Conference.
2012	Lead Editor della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti i proceeding della 2012 Applied Superconductivity Conference.
2013	Chief Editor della rivista "IEEE Transaction on Applied Superconductivity" per i numeri contenenti i proceeding della 23rd Magnet Technology Conference.
2013	Chief Editor di"Journal of Physics: Conference Series" per la 2013 European Conference on Applied Superconductivity

Comitati scientifici

2013	Membro del Comitato del Programma Scientifico della 23rd Magnet Technology Conference.
2013	Membro del Comitato del Programma Scientifico della 2013 European Conference on Applied Superconductivity.
2014-2018	Membro eletto dell'Applied Superconductivity Conference Board Committee.

2014	Membro del Comitato del Programma Scientifico della 2014 Applied Superconductivity Conference
2016	Membro del Comitato del Programma Scientifico della 2016 Applied Superconductivity Conference
2018	Membro del Comitato del Programma Scientifico della 2018 Applied Superconductivity Conference
2019	Membro del Comitato del Programma Scientifico della 2019 European Conference on Applied Superconductivity.
2023	Membro del Comitato del Programma Scientifico della 2023 European Conference on Applied Superconductivity.

Attività e incarichi accademici

dall'A.A. 2021-2022 ad oggi	Docente per la Laurea Magistrale in Fisica: "Fisica e tecnologia dei magneti superconduttori" (24 ore)
dall'A.A. 2018-2019 ad oggi	Docente nel corso della Scuola di Dottorato in Fisica: "Progettazione di magneti superconduttori" (20 ore)
da Febbraio 2021 ad oggi	Membro del Collegio di Dottorato in Fisica

Relatrice delle seguenti tesi di laurea Magistrale:

A.A. 2000-2001 Luca Reina, Ingegneria meccanica
Tesi dal titolo: "Ottimizzazione dei parametri caratteristici di un magnete superconduttore tramite analisi FEM pilotate da algoritmi genetici"
A.A. 2001-2002 Thomas Coltella, Ingegneria meccanica
Tesi dal titolo: "Progetto meccanico delle strutture di contenimento di un magnete superconduttore per adroterapia oncologica"
A.A. 2018-2019 Filippo Levi, Fisica
Tesi dal titolo: "Studio degli effetti meccanici, magnetici e termici sulla qualità di campo di dipoli superconduttori per acceleratori adronici e del dipolo D2 per l'upgrade High-Luminosity di LHC"
A.A. 2019-2020 Ludovico Musenich, Ingegneria meccanica
Tesi dal titolo: "Modellazione FEM per la verifica strutturale del telaio portante del rivelatore di materia oscura DarkSide-20k"
A.A. 2020-2021 Gianluca Vernassa, Ingegneria meccanica
Tesi dal titolo: "Thermomechanical and electromagnetic analyses on a superconducting demonstrator magnet for Hadron Therapy"
A.A. 2020-2021 Francesco Lonardo, Ingegneria nucleare
Tesi dal titolo: "The D2 magnets for the LHC Luminosity upgrade: from prototype to series construction"
A.A. 2021-2022 Nicola Sala, Ingegneria meccanica
Tesi dal titolo: "Design and Optimization of the 2D cross-section for high field Nb3Sn magnets towards future accelerators"
A.A. 2022-2023 Emma Bianchi, Ingegneria meccanica
Tesi dal titolo: "Progettazione della struttura meccanica del dipolo superconduttore SIG per un gantry a ioni"
A.A. 2023-2024 Elena Cereghino
Tesi dal titolo: "Analisi sperimentale e numerica di tecnologie innovative di magneti superconduttori per le future applicazioni mediche e di fisica delle alte energie"

Supervisore delle seguenti tesi di Dottorato in Fisica:

XXXV Ciclo (2019) Filippo Levi
Tesi dal titolo: "Optimization and control of the field quality and the mechanical structure of superconducting dipoles for future accelerators"

	XXXVI Ciclo (2020) Sergio Burioli Tesi dal titolo: “Mechanical effects on the performances of the superconducting cables and magnets for future accelerators” XXXVIII Ciclo (2022) Daniel Novelli Tesi dal titolo: “Development of superconducting magnets for the future FCC-hh and Muon Collider accelerators” XXXIX Ciclo (2023) Alessio Dellacasagrande Tesi dal titolo: “Conceptual electromagnetic design of the detector magnet for the ALICE 3 upgrade”
Capacità e competenze personali	
Lingue	Buon inglese, parlato e scritto, conoscenza del francese
Capacità e competenze tecniche	conoscenza approfondita della progettazione con strumenti ad elementi finiti

GENOVA, 20 maggio 2025

Stefania Farinon

PUBBLICAZIONI SU RIVISTE INTERNAZIONALI in ordine cronologico decrescente

2024

1. **GWTC-2.1: Deep extended catalog of compact binary coalescences observed by LIGO and Virgo during the first half of the third observing run**
   LIGO Sci Collaboration ; LIGO Sci Collaboration ; Virgo Collaboration
   PHYSICAL REVIEW D Volume: 109 Issue: 2 Article Number: 022001 DOI: 10.1103/PhysRevD.109.022001 Published: JAN 2024.
2. **Towards a muon collider**
   Accettura, C; Adams, D; (...); Zurita, J
   EUROPEAN PHYSICAL JOURNAL C Volume: 84 Issue 1 Article Number: 36 DOI: 10.1140/epjc/s10052-023-12257-5 Published: JAN 2024.
3. **IRIS-A New Distributed Research Infrastructure on Applied Superconductivity**
   Rossi, L; Arpaia, P; (...); Vannozzi, A
   IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 3 Article Number: 9500309 DOI: 10.1109/TASC.2023.3341984 Published: MAY 2024.
4. **Status on the Development of the Nb3Sn 12 T Falcon Dipole for the FCC-hh**
   Valente, RU; Ballarino, A; (...); Vernassa, G
   IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 3 Article Number: 4900405 DOI: 10.1109/TASC.2023.3338166 Published: MAY 2024.
5. **Magnets for a Muon Collider-Needs and Plans**
   Bottura, L; Accettura, C; (...); Zlobin, A
   IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4005708 DOI: 10.1109/TASC.2024.3382069 Published: AUG 2024.
6. **MBRD Prototype Cold Tests: Mechanical Stability and Performances**
   Bersani, A; Bracco, M; (...); Willering, G
   IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4005005 DOI: 10.1109/TASC.2024.3371938 Published: AUG 2024.
7. **Analytical Evaluation of Dipole Performance Limits for a Muon Collider**
   Novelli, D; Bersani, A; (...); Valente, R
   IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4002405 DOI: 10.1109/TASC.2024.3352526 Published: AUG 2024.
8. **Validation of the Protection Scheme for the HL-LHC MBRD Magnet by Simulations and Prototype Tests**
   Caiffi, B; Bender, L; (...); Willering, G
   IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4001405 DOI: 10.1109/TASC.2023.3346363 Published: AUG 2024.
9. **The Development of MBRD Magnets, the Separation/Recombination Dipoles for the LHC High Luminosity Upgrade**
   Farinon, S; Angius, S; (...); Willering, G
   IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4003205 DOI: 10.1109/TASC.2024.3357469 Published: AUG 2024.
10. **First Winding Trial for the Superconducting Ion Gantry (SIG) Dipole Demonstrator Magnet**
    Prioli, M; Bianchi, E; (...); Karppinen, M
    IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4402605 DOI: 10.1109/TASC.2024.3361440 Published: AUG 2024.

11. **Magnesium Diboride Magnets for Future Particle Detectors**
    Musenich, R; Bersani, A; (...); Farinon, S
    IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4500304 DOI: 10.1109/TASC.2023.3342760 Published: AUG 2024.
12. **Field Quality Analysis of the Separation-Recombination Dipole MBRD for the High-Luminosity Upgrade of LHC**
    Pampaloni, A; Bersani, A; (...); Willering, G
    IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4000505 DOI: 10.1109/TASC.2023.3345826 Published: AUG 2024.
13. **Mechanical Design of the 4 T Curved Demonstrator Dipole for the SIG Gantry**
    Levi, F; Bersani, A; (...); Valente, R
    IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4400505 DOI: 10.1109/TASC.2023.3333262 Published: AUG 2024.
14. **2D EM Design and Innovative Winding Technique for a 4 T High Curvature Superconducting Dipole in Block Coil Configuration for Next Generation Ion Gantries**
    Gagno, A; Farinon, S; (...); Valente, RU
    IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY Volume: 34 Issue 5 Article Number: 4400305 DOI: 10.1109/TASC.2023.3335181 Published: AUG 2024.

2023

15. **Mu2e Run I Sensitivity Projections for the Neutrinoless mu(-) -> e(-) Conversion Search in Aluminum**
    Mu2e Collaboration
    UNIVERSE Volume: 9 Issue: 1 Article Number: 54 DOI: 10.3390/universe9010054 Published: JAN 2023.
16. **Population of Merging Compact Binaries Inferred Using Gravitational Waves through GWTC-3**
    LIGO Sci Collaboration; Virgo Collaboration; Kagra Collaboration
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Curriculum Vitae - 14 Novembre 2025

Stefano Davini
via Dodecaneso 33
16131 Genova

Esperienze lavorative:

- Primo ricercatore presso Istituto Nazionale di Fisica Nucleare Sezione Genova (Novembre 2024 - presente)
- Ricercatore terzo livello presso Istituto Nazionale di Fisica Nucleare Sezione Genova (Marzo 2017 - Ottobre 2024)
- Post doc fellowship presso Gran Sasso Science Institute (L'Aquila, Marzo 2015 - Febbraio 2017)
- Reasearch Associate 2 presso University of Houston (Houston, USA, TX, Aprile 2012 - Febbraio 2015)

Formazione:

- Dottorato di Ricerca in Fisica presso Università degli Studi di Genova, titolo tesi *Measurement of the pep and CNO solar neutrino interaction rates in Borexino* (2009-2012)
- Laurea Specialistica in Fisica 110/110 cum laudae presso Università degli Studi di Genova, titolo tesi *Sviluppo, installazione e test di un sistema di acquisizione per neutroni da spallazione in Borexino* (2006-2008)
- Laurea Triennale in Fisica 110/110 presso Università degli Studi di Genova (2003-2006)

Attività di Ricerca:

La mia attività di ricerca è focalizzata sui progetti DarkSide, Euclid e Borexino.

DarkSide è un progetto di ricerca che ha come scopo la rivelazione diretta di particelle WIMP di materia oscura mediante *scattering* elastico con rivelatori TPC in Argon.

Euclid è una missione spaziale ESA che ha come scopo lo studio dell'evoluzione dell'universo. Il programma di fisica fondamentale di Euclid include la caratterizzazione dell'equazione di stato dell'Energia Oscura e la misura indiretta della massa dei neutrini.

Incarichi di responsabilità:

- Responsabile locale INFN Euclid nella Sezione Genova (2019-presente)
- Responsabile locale sigla terza missione INFN Dark (2024-presente)
- Responsabile infrastruttura software produzione e qualifica dei fotosensori di DarkSide-20k in NOA (2022-presente)
- Coordinatore Editorial Board in DarkSide (2019-2021)
- L2 manager per lo Slow Control in DarkSide-ReD (2018-2022)
- Responsabile locale INFN DarkSide nella Sezione di Genova (2017-2018)
- Coordinatore analisi veto dei neutroni in DarkSide-50 (2014-2018)

Presentazioni a conferenze recenti:

- RICAP24 - Rome International Conference for AstroParticle Physics (Frascati, 24 Settembre 2024)
- TeVPA23 - TeV Particle Astrophysics (Napoli, 11-15 Settembre 2023)
- XeSAT22 - International WorkShop on Application of Noble Gas Xenon to Science and Technology (Coimbra, 20 Maggio 2022)
- LDMA19 - Light Dark Matter 2019 (Venezia, 20 Novembre 2019)

Grant:

- Attribuzione Grant PRIN 20222JBEKN progetto LaScaLa - Large Scale Lab
- Attribuzione Grant INFN n.19593 progetto PESCE insieme ai dott. M. Biassoni, A. Caminata, A. Celentano

Outreach:

- Festival della Comunicazione 2023 (Camogli)
- Sumo Science 2024 e 2022 (Genova)
- FameLab Italia 2022 (Genova)
- Notte Europea dei ricercatori SHARPER Night 2021 (Genova)

Attività didattiche:

- Supervisore studenti di dottorato: Marco Bonici, Luca Paganin (UNIGE)
- Co-Relatore studenti di laurea magistrale: Ilaria Risso, Fabrizio Verdese (UNIGE)
- Lezione a contratto nel ciclo "L'Universo Oscuro" per IANUA - Scuola Superiore dell'Università di Genova (2024-2022)
- Professore a contratto per il Corso Fisica Sperimentale con applicazioni al Sistema Terra - Scienze Geologiche (UNIGE, aa 2019-20, 2020-21, 2021-22, 2022-23)
- Professore a contratto per il Corso Fisica Generale con Laboratorio - Chimica e Tecnologie Chimiche (UNIGE, aa 2020-21)

Pubblicazioni:

Più di 150 pubblicazioni su riviste peer-reviewed. H-index 34.

Pubblicazioni recenti selezionate:

1. **Quality assurance and quality control of the 26 m² SiPM production for the DarkSide-20k dark matter experiment**, DarkSide-20k Collaboration, Eur.Phys.J. C 85 (2025), 534 DOI10.1140/epjc/s10052-025-14196-9
2. **DarkSide-20k sensitivity to light dark matter particles**, DarkSide-20k Collaboration, Communication Physics 7 (2024) 422 DOI10.1038/s42005-024-01896-z
3. **Constraints on directionality effect of nuclear recoils in a liquid argon time projection chamber**, DarkSide-20k Collaboration, Eur.Phys.J. C 84 (2024) DOI10.1140/epjc/s10052-023-12312-1
4. **Euclid: Forecasts from the void-lensing cross-correlation,** Euclid Collaboration, A&A 670 (2023) A47 DOI 10.1051/0004-6361/202244445
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6. **Search for low-mass dark matter WIMPs with 12 ton-day exposure of DarkSide-50**, DarkSide-50 Collaboration, Phys. Rev. D 107 (2023) 063001 DOI10.1103/PhysRevD.107.063001
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9. **Euclid preparation XVIII. The NISP photometric system**, Euclid Collaboration, A&A662 (2022) A92 DOI10.1051/0004-6361/202142897
10. **First Directional Measurement of Sub-MeV Solar Neutrinos with Borexino**, Borexino Collaboration, Phys. Rev Lett. 128 (2022) 091803 DOI10.1103/PhysRevLett.128.091803
11. **Calibration of the liquid argon ionization response to low energy electronic and nuclear recoils with DarkSide-50**, DarkSide Collaboration, Phys. Rev. D 104 (2021) 082005
12. **Experimental evidence of neutrinos produced in the CNO fusion cycle in the Sun,** Borexino Collaboration, Nature 587 (2020) 577 DOI: 10.1038/s41586-020-2934-0
13. **DarkSide-50 532-day dark matter search with low-radioactivity argon**, DarkSide Collaboration, Phys. Rev. D 98 (2018) 102006
14. **Comprehensive measurement of pp-chain solar neutrinos**, Borexino Collaboration, Nature 562 (2018) 505

Con i migliori saluti,

Stefano Davini