

CURRICULUM VITAE

PERSONAL INFORMATION

Name
Address
Telephone
E-mail
Nationality
Date of birth

RICCARDO MUSENICH

WORK EXPERIENCE

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| Dates | 1988-present |
| Name and address of employer | Istituto Nazionale di Fisica Nucleare (INFN) |
| Type of business or sector | Scientific and technological research |
| Occupation or position held | Dirigente di ricerca (I level senior scientist), 2019-present Primo ricercatore (II level senior scientist), 2002-2019 Ricercatore (scientist), until 2002 |
| Main activities and responsibilities | Research on superconducting materials for radiofrequency applications. Research on superconducting cables for high energy physics applications. R&D on joints between large superconducting cables. Development of a method to measure critical current of superconducting cables up to 100000 A. R&D for the CMS magnet at LHC (CERN). Deputy Project Leader for the manufacturing of the CMS magnet. Coordinator of the Technological Research Group of INFN-Ge. Responsible for the INFN research activity on MgB ₂ applications (P.I. of the projects Ma-Bo, MARIMBO and PUMA). Scientific and Technical manager of the EU-FP7 SR2S project (Space Radiation Superconducting Shields). Responsible of R&D on superconductive proton diverter for the Athena X-ray telescope (LAPUTA project). Responsible of the R&D on high temperature superconductive canted solenoid dipoles (BISCOTTO project). Responsible of a study on the effect of mechanical deformations on Nb ₃ Sn wires (ABSTRACT project). WP leader within the PNRR_IRIS project. |
| Dates | 1985-1988 |
| Name and address of employer | Ansaldo Componenti |
| Type of business or sector | R&D on superconducting magnets |
| Occupation or position held | Technologist |

ACADEMIC EXPERIENCE

Professor of "Physics and Technology of Superconducting Magnets" (Master in Physics, Università di Genova)
Lecturer in the course of the PhD School in Physics, Università di Genova: "Applied Cryogenics" (20 hours)
Supervisor of several thesis in Physics, Material Science and Chemistry.

EDUCATION AND TRAINING

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| Dates | 1977-1983 |
| Name and type of organization providing education and training | Università degli studi di Genova |
| Title of qualification awarded | Doctor in Chemistry |
| Principal subjects/occupational skills covered | Specialized in solid state chemical-physics. Thesis about the interaction of hydrogen with silver surface studied by means of molecular beam scattering. |

PUBLICATIONS

Author of more than 550 articles on peer reviewed international journals, 120 of which related to magnet technology and applied superconductivity.



LIST OF PUBLICATIONS 2018-2023

| | | | | |
|--|---|--|------|----------|
| C.Accettura et al. | Towards a muon collider | European Physical Journal C | 2023 | 83 (9) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | GWTC-3: Compact Binary Coalescences Observed by LIGO and Virgo during the Second Part of the Third Observing Run | Physical Review X | 2023 | 13 (4) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration; CHIME FRB Collaboration | Search for Gravitational Waves Associated with Fast Radio Bursts Detected by CHIME/FRB during the LIGO-Virgo Observing Run O3a | Astrophysical Journal | 2023 | 955 (2) |
| F.Acernese et al. | Virgo detector characterization and data quality: results from the O3 run | Classical And Quantum Gravity | 2023 | 40 (18) |
| B.Caiiffi et al. | Protection Scheme Effectiveness Study for the High-Luminosity LHC MBRD Magnet | IEEE Transactions on Applied Superconductivity | 2023 | 33 (5) |
| M.Prioli et al. | Design of a 4 T Curved Demonstrator Magnet for a Superconducting Ion Gantry | IEEE Transactions on Applied Superconductivity | 2023 | 33 (5) |
| F.Levi et al. | Updates on the Mechanical Design of FalconD, a Nb3Sn Cos θ Short Model Dipole for FCC-hh | IEEE Transactions on Applied Superconductivity | 2023 | 33 (5) |
| R.U.Valente et al. | Optimization of Electromagnetic Design After Winding Tests for the Nb3Sn Cos-Theta Dipole Model for FCC-hh | IEEE Transactions on Applied Superconductivity | 2023 | 33 (5) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Constraints on the Cosmic Expansion History from GWTC-3 | Astrophysical Journal | 2023 | 949 (2) |
| R.Musenich et al. | The superconducting space magnet of the ALADInO spectrometer | Nuclear Instruments and Methods A | 2023 | 1051 |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Population of Merging Compact Binaries Inferred Using Gravitational Waves through GWTC-3 | Physical Review X | 2023 | 13 (1) |
| Mu2e Collaboration | Mu2e Run I Sensitivity Projections for the Neutrinoless $\mu^- \rightarrow e^-$ Conversion Search in Aluminum | Universe | 2023 | 9 (1) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | First joint observation by the underground gravitational-wave detector KAGRA with GEO 600 | Progress Of Theoretical and Experimental Physics | 2022 | 2022 (6) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | All-sky, all-frequency directional search for persistent gravitational waves from Advanced LIGO's and Advanced Virgo's first three observing runs | Physical Review D | 2022 | 105 (12) |
| LIGO Sci Collaboration; Virgo Collaboration; Kagra Collaboration | Narrowband Searches for Continuous and Long-duration Transient Gravitational Waves from Known Pulsars in the LIGO-Virgo Third Observing Run | Astrophysical Journal | 2022 | 932 (2) |
| Rossi, L. et al. | A European Collaboration to Investigate Superconducting Magnets for Next Generation Heavy Ion Therapy | IEEE Transactions on Applied Superconductivity | 2022 | 32 (4) |
| Valente, RU; Burioli, S; Caiiffi, B; De Matteis, E; Fabricatore, P; Farinon, S; Lackner, F; Levi, F; Mariotto, S; Musenich, R; | Update on the Electromagnetic Design of the Nb3Sn Cos-Theta Dipole Model for FCC-hh | IEEE Transactions on Applied Superconductivity | 2022 | 32 (4) |

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| Pampaloni, A; Prioli, M; Sorbi, M; Statera, M; Tommasini, D | | | | |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | All-sky search for gravitational wave emission from scalar boson clouds around spinning black holes in LIGO O3 data | Physical Review D | 2022 | 105 (10) |
| LIGO Sci Collaboration; Virgo Collaboration | Search of the early O3 LIGO data for continuous gravitational waves from the Cassiopeia A and Vela Jr. supernova remnants | Physical Review D | 2022 | 105 (8) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Search for Gravitational Waves Associated with Gamma-Ray Bursts Detected by Fermi and Swift during the LIGO-Virgo Run O3b | Astrophysical Journal | 2022 | 928 (2) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Constraints on dark photon dark matter using data from LIGO's and Virgo's third observing run | Physical Review D | 2022 | 105 (6) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Search for intermediate-mass black hole binaries in the third observing run of Advanced LIGO and Advanced Virgo | Astronomy & Astrophysics | 2022 | 659 |
| Virgo Collaboration | Calibration of advanced Virgo and reconstruction of the detector strain $h(t)$ during the observing run O3 | Classical And Quantum Gravity | 2022 | 39 (4) |
| Spallino, L; Angelucci, M; Mazzitelli, G; Musenich, R; Farinon, S; Chincarini, A; Sorrentino, F; Pasqualetti, A; Gemme, G; Cimino, R | Can electrons neutralize the electrostatic charge on test mass mirrors in gravitational wave detectors? | Physical Review D | 2022 | 105 (4) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Search for continuous gravitational waves from 20 accreting millisecond x-ray pulsars in O3 LIGO data | Physical Review D | 2022 | 105 (2) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | All-sky search for short gravitational-wave bursts in the third Advanced LIGO and Advanced Virgo run | Physical Review D | 2021 | 104 (12) |
| LIGO Sci Collaboration; Virgo Collaboration | Search for Lensing Signatures in the Gravitational-Wave Observations from the First Half of LIGO-Virgo's Third Observing Run | Astrophysical Journal | 2021 | 923 (1) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | All-sky search for long-duration gravitational-wave bursts in the third Advanced LIGO and Advanced Virgo run | Physical Review D | 2021 | 104 (10) |
| Abbott, R. et al. | Constraints from LIGO O3 Data on Gravitational-wave Emission Due to R-modes in the Glitching Pulsar PSR J0537-6910 | Astrophysical Journal | 2021 | 922 (1) |
| Abbott, R et al. | Searches for Continuous Gravitational Waves from Young Supernova Remnants in the Early Third Observing Run of Advanced LIGO and Virgo | Astrophysical Journal | 2021 | 921 (1) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | All-sky search for continuous gravitational waves from isolated neutron stars in the early O3 LIGO data | Physical Review D | 2021 | 104 (8) |
| Battiston, R.et al. | High precision particle astrophysics as a new window on the universe with an Antimatter Large Acceptance Detector In Orbit (ALADInO) (May, 10.1007/s10686-021-09708-w, 2021) | Experimental Astronomy | 2021 | 51 (3) |
| Bersani, A; Bross, AD; Caiffi, B; Di Noto, L; Fabbicatore, P; Farinon, S; Ferraro, F; Mitchell, DV; Musenich, R; Pallavicini, M | A Solenoid With Partial Yoke for the Dune Near Detector | IEEE Transactions on Applied Superconductivity | 2021 | 31 (5) |
| Pampaloni, A; Bellomo, G; Burioli, S; De Matteis, E; Fabbicatore, P; Farinon, S; Lackner, F; Levi, F; Mariotto, S; Musenich, R; Prioli, M; Sorbi, M; Statera, M; Tommasini, D; Valente, RU | Preliminary Design of the Nb3Sn cos theta Short Model for the FCC | IEEE Transactions on Applied Superconductivity | 2021 | 31 (5) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Search for anisotropic gravitational-wave backgrounds using data from Advanced LIGO and Advanced Virgo's first three observing runs | Physical Review D | 2021 | 104 (2) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Upper limits on the isotropic gravitational-wave background from Advanced LIGO and Advanced Virgo's third observing run | Physical Review D | 2021 | 104 (2) |

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| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Observation of Gravitational Waves from Two Neutron Star-Black Hole Coalescences | Astrophysical Journal Letters | 2021 | 915 (1) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Constraints on Cosmic Strings Using Data from the Third Advanced LIGO-Virgo Observing Run | Physical Review Letters | 2021 | 126 (24) |
| LIGO Sci Collaboration; Virgo Collaboration; KAGRA Collaboration | Diving below the Spin-down Limit: Constraints on Gravitational Waves from the Energetic Young Pulsar PSR J0537-6910 | Astrophysical Journal Letters | 2021 | 913 (2) |
| Battiston, R. et al.X | High precision particle astrophysics as a new window on the universe with an Antimatter Large Acceptance Detector In Orbit (ALADInO) | Experimental Astronomy | 2021 | 51 (3) |
| Farinon, S; Musenich, R | Biot-Savart Approach to Analytical Computation of Magnetic Fields and Forces of CCT Magnets | IEEE Transactions on Applied Superconductivity | 2021 | 31 (3) |
| LIGO Sci Collaboration; Virgo Collaboration | All-sky search in early O3 LIGO data for continuous gravitational-wave signals from unknown neutron stars in binary systems | Physical Review D | 2021 | 103 (6) |
| Musenich, R; Adriani, O; Baudouy, B; Calvelli, V; Farinon, S; Papini, P; Bertucci, B | A Proposal for a Superconducting Space Magnet for an Antimatter Spectrometer | IEEE Transactions on Applied Superconductivity | 2020 | 30 (4) |
| Altenmuller, K; Di Noto, L; Agostini, M; Appel, S; Caminata, A; Cappelli, L; Cereseto, R; Farinon, S; Gschwender, M; Hess, H; Martyn, J; Musenich, R; Neumair, B; Nieslony, M; Lachenmaier, T; Oberauer, L; Pallavicini, M; Papp, L; Rossi, C; Rottenanger, S; Saracco, P; Schonert, S; Testera, G; Trantel, A; Weinz, S; Wurm, M; Zavatarelli, S | A calorimeter for the precise determination of the activity of the Ce-144-Pr-144 anti-neutrino source in the SOX experiment | Journal Of Instrumentation | 2018 | 13 |
| Riva, N; Calvelli, V; Musenich, R; Farinon, S; Lotti, S; Saracco, P | Study of a Superconducting Magnetic Diverter for the ATHENA X-Ray Space Telescope | IEEE Transactions on Applied Superconductivity | 2018 | 28 (4) |
| Lombardo, V; Ambrosio, G; Evbota, D; Hocker, A; Lamm, M; Lopes, M; Fabbricatore, P; Curreli, S; Musenich, R | Production of Aluminum Stabilized Superconducting Cable for the Mu2e Transport Solenoid | IEEE Transactions on Applied Superconductivity | 2018 | 28 (3) |
| Musenich, R; Calvelli, V; Giraudo, M; Vuolo, M; Ambroglini, F; Battiston, R | The Limits of Space Radiation Magnetic Shielding: An Updated Analysis | IEEE Transactions on Applied Superconductivity | 2018 | 28 (3) |