

INFORMAZIONI PERSONALI

Mario Ferraro <https://www.linkedin.com/in/mrferraro> [ORCID 0000-0002-6014-2890](https://orcid.org/0000-0002-6014-2890)

ESPERIENZE LAVORATIVE

Febbraio 2023 – in corso

Assegnista di ricerca

Dipartimento di Fisica
University of Calabria
Via Pietro Bucci, 87036 Arcavacata, Rende (CS), Italy

Messa in opera di un laser in fibra multimodo ad alta potenza: dalla caratterizzazione dei componenti tramite tomografia computerizzata a raggi X alla descrizione termodinamica della propagazione nonlineare della luce

Responsabile scientifico

Prof. R.G. Agostino

Ottobre 2023 – in corso

Esercitatore

University of Calabria
Via Pietro Bucci, 87036 Arcavacata, Rende (CS), Italy

– Corso di Scientific Data Acquisition and Processing (laboratorio) presso il Dipartimento di Fisica, corso di laurea magistrale in Physics

Febbraio 2023 – Settembre 2023

Esercitatore

University of Calabria
Via Pietro Bucci, 87036 Arcavacata, Rende (CS), Italy

– Corso di Fisica (esercitazioni) presso il Dipartimento di Ingegneria Civile, corso di laurea triennale in Ingegneria Civile

Febbraio 2021 – Gennaio 2023

Assegnista di ricerca

Dipartimento di Ingegneria dell'informazione, elettronica e telecomunicazioni
University of Rome "La Sapienza"
Via Eudossiana 18, 00184 Rome, Italy

Studio di fenomeni ottici nonlineari in fibre ottiche multimodo

Progetto di ricerca

ERC STEMS

Responsabile scientifico

Prof. S. Wabnitz

Luglio 2021 – Dicembre 2022

Tecnico Servizi Beamline

Incarico di collaborazione individuale
Infrastruttura di Ricerca STAR
University of Calabria
Via Tito Flavio, 87036 Arcavacata, Rende (CS), Italy

Marzo 2021 – Settembre 2021

Esercitatore

University of Calabria
Via Pietro Bucci, 87036 Arcavacata, Rende (CS), Italy

- Corso di Fisica per Scienze Naturali (esercitazioni) presso il Dipartimento di Biologia, Ecologia e Scienze della Terra (Dibest), corso di laurea in Scienze Naturali
- Corso di Introduzione alle nanostrutture ed alle nanotecnologie (laboratorio) presso il Dipartimento di Fisica, corso di laurea in Scienze dei Materiali Innovativi e per le Nanotecnologie

Gennaio 2021 – Febbraio 2021 **Incarico di collaborazione esterna**

Dipartimento di Ingegneria dell'informazione, elettronica e telecomunicazioni
University of Rome "La Sapienza"
Via Eudossiana 18, 00184 Rome, Italy
Messa in opera di un banco di misura per la microscopia multifotone

Progetto di ricerca FARE WASHING
Responsabile scientifico Prof. S. Wabnitz

Gennaio 2020 – Dicembre 2020 **Assegnista di ricerca**

Dipartimento di Ingegneria dell'informazione, elettronica e telecomunicazioni
University of Rome "La Sapienza"
Via Eudossiana 18, 00184 Rome, Italy
Messa in opera di un banco di misura per lo studio di fenomeni ottici ultraveloci

Progetto di ricerca ERC STEMS
Responsabile scientifico Prof. S. Wabnitz

Ottobre 2017 – Settembre 2019 **Esercitatore**

Polytech Nice Sophia Antipolis
930 Route des Colles, 06410 Biot, Francia

- Corso di Meccanica (laboratorio) per il primo anno di *école préparatoire* (assimilabile al corso di laurea Triennale in materie scientifiche in Italy)
- Corso di Elettromagnetismo (laboratorio) per il secondo anno di *école préparatoire* (assimilabile al corso di laurea Triennale in materie scientifiche in Italy)
- Corso di Meccanica (esercitazioni) per il primo anno di *école préparatoire* (assimilabile al corso di laurea Triennale in materie scientifiche in Italy) per il solo anno accademico 2018-2019

Ottobre 2015 – Ottobre 2016 **Impiegato**

Credito Emiliano
Via Emilia San Pietro 4 - 42121 Reggio nell'Emilia, Italy
Assistant Global Risk Management

Ufficio Validazione modelli interni

STUDI ACCADEMICI**Dicembre 2016 – Dicembre 2019** **Dottorato di ricerca (PhD) in Fisica**

Université Nice Sophia Antipolis – Université Côte d'Azur
28 Avenue de Valrose, 06103 Nice CEDEX 2, Francia
Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications
Rue Bernard Grégory, 06560 Valbonne, Francia

Titolo della tesi Engineering the Optical Properties of Zinc-Oxide Semiconductor Metamaterials
Data discussione tesi 12 Dicembre 2019
Argomenti trattati

- Multisubband plasmon based hyperbolic metamaterials
- Lidar
- Cherenkov light source via hyperbolic dispersion
- Engineered polariton bands

Direttori di tesi Prof. Massimo Giudici e Dr. Patrice Genevet

Ottobre 2013 – Luglio 2015 **Laurea Magistrale in Fisica (LM-17)**

Dipartimento di Fisica
University of Rome "La Sapienza"
Piazzale Aldo Moro, 5, 00185 Rome RM, Italy

Voto 110/110 e lode
Curriculum Struttura della materia
Titolo della tesi Ottica senza scala in ferroelettrici microstrutturati periodicamente
Tipo di tesi Sperimentale
Argomento della tesi Ottica nonlineare
Data discussione tesi 17 Luglio 2015
Relatore di tesi Prof. Eugenio Del Re
Altre attività Studio delle proprietà strutturali del Grafene tramite diffrazione di elettroni lenti (LEED) presso il laboratorio LOTUS del Dipartimento di Fisica dell'University of Rome "La Sapienza".

Ottobre 2010 – Settembre 2013 **Laurea Triennale in Fisica (L-30)**

Dipartimento di Fisica
University of Calabria
Via Pietro Bucci, 87036 Arcavacata, Rende (CS), Italy

Voto 110/110 e lode
Titolo della tesi Introduzione alla plasmonica nei metamateriali (un esperimento per compensare le perdite ottiche)
Tipo di tesi Sperimentale
Argomento della tesi Fisica della materia
Data discussione tesi 1 Ottobre 2013
Relatori di tesi Prof. Roberto Bartolino e Dr. Antonio De Luca

Novembre 2017 **Visiting PhD student**

Postech – Pohang University of Science and Technology
77 Cheongam-ro, Hyogok-dong, Nam-gu, Pohang-si, Gyeongsangbuk-do, Corea del Sud

Responsabile Scientifico Prof. Junsuk Rho

STUDI PRE-UNIVERSITARI
Settembre 2005 – Luglio 2010 **Maturità Scientifica**

Liceo Scientifico E.Fermi
Via Molinella, 30, 87100 Cosenza CS, Italy

Voto 100/100
Data esame finale 10 Luglio 2010

LINGUE

Lingua madre Italiano

Altre lingue	COMPRESIONE		PARLATO		PRODUZIONE SCRITTA
	Ascolto	Lettura	Interazione	Produzione orale	
Inglese	C1	C1	C1	C1	C1
Francese	C1	C1	C1	C1	C1

Corsi – Scuola di inglese "English now", Bethesda, Maryland, USA (4 settimane)
– Scuola di inglese "Glasgow school of English", Glasgow, Scotland (1 settimana)
– Scuola di inglese "Oxford", Rome, Italy (32 settimane)
– Corso di lingua francese organizzato dal CNRS a Valbonne, Francia (6 mesi)

COMPETENZE DIGITALI

Linguaggi di programmazione	C++, Fortran 90, VBA
Software per analisi dati e immagini	OriginLab, Matlab, R, ImageJ
Software per rendering 3D	Blender
Programmi per simulazioni in ottica	Lumerical FDTD Solutions, Reticolo (Matlab based)

PREMI E RICONOSCIMENTI

2016	Laureato eccellente dell'University of Rome "La Sapienza", Italy
2015	Percorso d'eccellenza presso l'University of Rome "La Sapienza", Italy Equazione di Schrödinger e sue soluzioni solitoniche: risoluzione mediante il metodo della trasformata spettrale Supervisore: Prof. Paolo Maria Santini
2013	Menzione d'onore per il curriculum brillante alla seduta di Laurea Triennale presso l'University of Calabria (Italy)
2010	Quinto classificato alle Olimpiadi della Fisica (livello regionale) e partecipazione alla competizione a livello nazionale
2009	Primo classificato alle Olimpiadi della Fisica (livello regionale) e partecipazione alla competizione a livello nazionale

ASSOCIAZIONI

2022 – in corso	Société Française d'Optique (SFO)
2022 – in corso	Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT)
2020 – in corso	Optical Society of America (Optica, formerly OSA)
2022 – 2023	The international society for optics and photonics (SPIE)
2020 – 2023	Società Italiana di Ottica e Fotonica (SIOF)
2017 – 2019	Société Française de Physique (SFP)
2013 – 2015	Associazione Italiana per l'insegnamento della Fisica (AIF)

SCUOLE DI DOTTORATO

15-19/03/2021	School Machine Learning Photonics, Como, Italia (online)
10-14/06/2019	Ganex Summer School, Agay, Francia
3-8/09/2018	4th Summer School on Plasmonics, Porquerolles, Francia
12-17/03/2017	Ganex Winter School, Autran, Francia

CONFERENZE

- 11-15/09/2023 EOSAM23, Refractive index profiling of multimode specialty optical fibers by absorption contrast X-ray computed microtomography, Beam-by-beam Kerr clean-up in multimode optical fibres, Digione, Francia (*Relatore su invito e chairman di sessione*)
- 30/08-01/09/2023 SILS23, Application of X-ray computed microtomography to optical fibres, Roma, Italia (*Relatore*)
- 11-15/09/2023 SUM23, Time-resolved mode power decomposition for nonlinear multimode fibers, Spatial self-cleaning of laser beams with arbitrary state of polarization of light, Giardini-Naxos, Italia (*Chairman di sessione*)
- 5-8/06/2023 AES23, Two-waves thermalization and calorimetry experiments in nonlinear multimode optical fibers, Torremolinos, Spagna (*Relatore su invito*)
- 7-11/05/2023 CLEO US 2023, Helical Plasma Filaments in Optical Fibers, Soft Glass Optical Fiber Characterization With X-Ray Computed Microtomography, Multimode Nonlinear Optical Fiber Calorimetry, San José (CA), USA (*Relatore su invito e Chairman di sessione*)
- 22-25/08/2022 Multimode Photonics Workshop, Rome, Italy (*Chairman di sessione*)
- 15-19/08/2022 Russian Fiber Laser conference 2022 (RFL22), Statistical mechanics of OAM beams: theory and experiments, Novosibirsk, Russia (*Relatore su invito*)
- 22-24/07/2022 Advanced Photonics Congress 2022, X-ray Tomography for the Refractive Index Profiling of Standard Glass Optical Fibers, Thermodynamics of Multimode Fiber Systems Revealed by Holographic Mode Decomposition, Maastricht, Paesi Bassi (*Relatore su invito*)
- 04-08/07/2022 Congresso della Société Française d'Optique (SFO) 2022, Thermodynamics of Orbital Angular Momentum Beams in Multimode Optical Fibers, Nizza, Francia (*Relatore*)
- 03-07/04/2022 SPIE Photonics Europe 2022, Laser-induced damages in silica multimode optical fibers, Exploiting the geometry of optical fibers for igniting helical-shape plasma filaments, Strasburgo, Francia (*Relatore*)
- 30/03-01/04/2022 IMACS22 - Nonlinear Evolution Equations and Wave Phenomena: Computation and theory, Beam self-cleaning: thermalization vs. condensation, Athens (GE), Stati Uniti d'America (*Relatore*)
- 13-17/09/2021 EOSAM21 - European Optical Society Annual Meeting, Multidimensional laser beam shaping with multimode optical fibers, Rome, Italy (*Relatore*)
- 01-02/07/2021 Wavecomplexity - Wine 2021, Exotic nonlinear phenomena in optical fibers: from helical plasma beams to rainbow spiral emission, Nizza, Francia (*Poster, Online*)
- 10-14/05/2021 CLEO US 2021, Rainbow spiral emission from optical fibers
Infrared light power transmission limitation of optical fibers, San José (CA), USA (*Relatore*)
- 6-10/12/2020 European Conference on Optical Communications (ECOC), Multiphoton Absorption Excited Upconversion Luminescence in Optical Graded-Index multimode Fiber, Bruxelles, Belgio (*Relatore, online*)

- 8-11/09/2020 (ICOP), High Energy Raman Soliton Dynamics in Multimode GRIN Fibers, Parma, Italy (*Relatore, online*)
- 19-23/07/2020 International Conference on Transparent Optical Networks (ICTON), Dynamics of High-Energy Multimode Raman Solitons, Bari, Italy (*Relatore, online*)
- 27-31/05/2019 EMRS Spring meeting 2019, Intersubband Plasmons Induced Negative Refraction At Mid-IR Frequency In Heterostructured Semiconductor Metamaterials, Nizza, Francia (*Relatore*)
- 5-10/05/2019 CLEO US 2019, Intersubband Plasmons Induced Negative Refraction At Mid-Ir Frequency In Heterostructured Semiconductor Metamaterials, San José (CA), USA (*Relatore*)
- 14/12/2018 International mini-workshop “Nanostrukturierte Halbleiter mit Bandlückenmodulationen”, Resonant hyperbolic metamaterials make negative refraction, Ruhr-Universität a Bochum, Germania (*Relatore*)
- 1-3/10/2018 Nanophotonics and Micro/Nano Optics International Conference 2018, Intersubband Plasmons Induced Negative Refraction At Mid-Ir Frequency In Heterostructured Semiconductor Metamaterials, Roma, Italia (*Relatore*)
- 17-21/09/2018 International Conference on Metamaterials and Nanophotonics METANANO 2018, Intersubband Plasmons Induced Negative Refraction At Mid-Ir Frequency In Heterostructured Semiconductor Metamaterials, Sochi, Russia (*Relatore*)
- 13-15/06/2018 Journées Nano, Micro et Optoélectronique (JNMO), Intersubband plasmons induced negative refraction at mid-infrared frequency in heterostructured semiconductor metamaterials, Agay, Francia (*Poster*)
- 28/05/2018 Colloque doctorants 2ème année EDSFA, Intersubband plasmons induced negative refraction at THz frequency in heterostructured semiconductor metamaterials, Université de Nice Sophia Antipolis, Nizza, Francia (*Relatore*)
- 7-9/06/2018 L'ère du temps, Nizza, Francia (*solo partecipazione*)
- 22-25/05/2018 Journées doctorales de la Physique Niçoise, Intersubband plasmons induced negative refraction at mid-infrared frequency in heterostructured semiconductor metamaterials, Salles sur Verdon, Francia (*Poster*)
- 23-25/10/2017 Assemblée Générale du GDR ONDES 2017, Campus SophiaTech – Université Côte d'Azur, Francia (*solo partecipazione*)

ESPERIENZE FORMATIVE PER L'INSEGNAMENTO

- Ottobre 2017 – Maggio 2018 Percorso di Formazione per dottorandi incaricati di insegnamento presso Université Côte d'Azur a Nizza, Francia.
- Settembre 2017 – Novembre 2018 Singoli corsi per l'insegnamento nelle scuole Italyne presso University Giustino Fortunato a Benevento, Italy.
- Psicologia scolastica
 - Antropologia culturale e sociale
 - Metodologie e tecnologie per l'insegnamento
 - Pedagogia speciale e didattica dell'inclusione
- 2017 Corso e certificazione EIPASS 7 MODULI USER

- 2017 Corso e certificazione USO DIDATTICO DEI TABLET
- 2015 Partecipazione Scuola permanente per l'aggiornamento di insegnanti di scienze sperimentali (SPAISS) a Siracusa, Italy
- 2014 Partecipazione Scuola permanente per l'aggiornamento di insegnanti di scienze sperimentali (SPAISS) a Trabia (PA), Italy

**RIVISTE SCIENTIFICHE PER CUI
SVOLGO ATTIVITÀ DI EDITOR**

Fibers - MDPI - Guest Editor della Special Issue "Multimode Nonlinear Optical Fibers"
https://www.mdpi.com/journal/fibers/special_issues/8D76S134L1

**RIVISTE SCIENTIFICHE PER CUI
SVOLGO ATTIVITÀ DI REVIEWER**

Nature Communications (Nature Portfolio) - I.F. 17.69 (2021)

Communications Physics (Nature Portfolio) - I.F. 6.497 (2023)

Scientific Reports (Nature Portfolio) - I.F. 4.997 (2023)

Journal of Lightwave Technology (IEEE, Optica) - I.F. 4.439 (2021)

Physical Review Research (American Physical Society) - I.F. 3.9 (2021)

Optics Express (Optica) - I.F. 3.833 (2023)

Optics Letters (Optica) - I.F. 3.776 (2020)

Optical Materials Express (Optica) - I.F. 3.074 (2023)

Physical Review A (American Physical Society) - I.F. 2.971 (2023)

Photonics (MDPI) - I.F. 2.676 (2020)

Journal of Optical Fiber Technology (Elsevier) - I.F. 2.530 (2020)

Physical Review E (American Physical Society) - I.F. 2.4 (2022)

Journal of the Optical Society of America B (Optica) - I.F. 2.058 (2021)

International Journal of Optics (Hindawi) - I.F. 0.95 (2020)

**COMITATI ORGANIZZATIVI DI
CONFERENZE**

- 2022-presente Conference on Lasers and Electro-Optics (CLEO) - membro della Subcommittee S&I 08. Ultrafast Optics & Applications
- 2023 The International Conference on Antennas and Electromagnetic Systems (AES) - Organizzatore della Special Session "Spatiotemporal effects in multimode optical fiber"

- 2023 IEEE Summer Topicals Meeting Series - Topic co-chair della sessione "Multimode Nonlinear Photonics" (MNP)

PROGETTI DI RICERCA

- 2023 - in corso Supporto attività di ricerca volta allo sviluppo di idee scientifiche e proposte progettuali per call ERC Starting Grant -University of Calabria - Messa in opera di un laser in fibra multimodo ad alta potenza: dalla caratterizzazione dei componenti tramite tomografia computerizzata a raggi X alla descrizione termodinamica della propagazione nonlineare della luce
- 2022 - in corso Progetti per Avvio alla Ricerca - Tipo 2 - 2022 - University of Rome La Sapienza - Emissione conica discreta: analisi modale tramite tecniche olografiche
- 2021-2022 Progetti per Avvio alla Ricerca - Tipo 2 - 2021 - University of Rome La Sapienza - Perdite ottiche nonlineari in fibre ottiche multimodo
- 2021 - 2023 Progetti di Ricerca Grandi - Progetti Grandi - 2021 - University of Rome La Sapienza - SPOTLIGHT: Spiral Optical Tweezer by Rainbow Light (Membro componente)

PUBBLICAZIONI

ARTICOLI IN RIVISTA

- [1] Maria C Crocco, Fabio Mangini, Raffaele Filosa, Andrea Solano, Raffaele G Agostino, Riccardo C Barberi, Vincent Couderc, Mariusz Klimczak, Adam Filipkowski, Ryszard Buczynski et al. «Soft glass optical fiber characterization with X-ray computed microtomography». In: *Optical Materials Express* 14.1 (2024), pp. 70–81.
- [2] Olga N Egorova, Sergey L Semjonov, Sergey G Zhuravlev, Grigorii K Alagashev, Mikhail Yu Salganskii, Mikhail V Yashkov e **Mario Ferraro**. «High-temperature sensor based on fiber with inner cladding». In: *Optical Fiber Technology* 81 (2023), p. 103570.
- [3] Denis S Kharenko, Alexander A Revyakin, Mikhail D Gervaziev, **Mario Ferraro**, Fabio Mangini e Sergey A Babin. «Accuracy of Holographic Real-Time Mode Decomposition Methods Used for Multimode Fiber Laser Emission». In: *Photonics* 10.11 (2023), p. 1245.
- [4] Yifan Sun, Pedro Parra-Rivas, **Mario Ferraro**, Fabio Mangini e Stefan Wabnitz. «Dynamics of dissipative structures in coherently-driven Kerr cavities with a parabolic potential». In: *Chaos, Solitons & Fractals* 176 (2023), p. 114064.
- [5] Raffaele Filosa, Giuseppe S Elettivo, **Mario Ferraro**, Salvatore Procopio, Antonella Nicolino, Maria C Crocco, Joseph J Beltrano, Riccardo C Barberi, Vincenzo Formoso, Rita Guzzi et al. «Nonlinear optical effects in natural topaz». In: *Journal of Luminescence* 263 (2023), p. 120076.
- [6] Maria C Crocco, Carmelo Scuro, Raffaele Filosa, Rosamaria Codispoli, **Mario Ferraro**, Andrea Solano, Raffaele G Agostino, Riccardo C Barberi, Renato S Olivito e Vincenzo Formoso. «Experimental Study on the Mechanical Properties of Basalt FRCM Made of Various Matrices: Validation by X-Ray Microtomography». In: *Journal of Materials in Civil Engineering* 35.10 (2023), p. 04023334.
- [7] Yifan Sun, Pedro Parra-Rivas, Carles Milián, Yaroslav V Kartashov, **Mario Ferraro**, Fabio Mangini, Raphael Jauberteau, Francesco R Talenti e Stefan Wabnitz. «Robust three-dimensional high-order solitons and breathers in driven dissipative systems: a Kerr cavity realization». In: *Physical Review Letters* 131.13 (2023), p. 137201.
- [8] **Mario Ferraro**, Fabio Mangini, Mario Zitelli, Raphael Jauberteau, Yifan Sun, Pedro Parra-Rivas, Katarzyna Krupa, Alessandro Tonello, Vincent Couderc e Stefan Wabnitz. «Spatial Beam Cleaning in Multimode GRIN Fibers: Polarization Effects». In: *IEEE Photonics Journal* 15.5 (2023), pp. 1–6.

- [9] Fabio Mangini, **Mario Ferraro**, Alessandro Tonello, Vincent Couderc e Stefan Wabnitz. «High-temperature wave thermalization spoils beam self-cleaning in nonlinear multimode GRIN fibers». In: *Optics Letters* 48.18 (2023), pp. 4741–4744.
- [10] T Mansuryan, A Tonello, K Krupa, A Desmoulière, G Ndong Ntoutoume, V Sol, C Lefort, M Zitelli, **M Ferraro**, F Mangini, Y Sun, Y Arosa Lobato, B Wetzel, S Wabnitz e V Couderc. «Spatial Division Multiplexing for Multiplex Coherent Anti-Stokes Raman Scattering». In: *Journal of Lightwave Technology* (2023), pp. 1–10.
- [11] Fabio Mangini, **Mario Ferraro**, Yifan Sun, Mikhail Gervaziev, Pedro Parra-Rivas, Denis S Kharenko, Vincent Couderc e Stefan Wabnitz. «Modal phase-locking in multimode nonlinear optical fibers». In: *Optics Letters* 48.14 (2023), pp. 3677–3680.
- [12] **Mario Ferraro**, Fabio Mangini, Mario Zitelli e Stefan Wabnitz. «On spatial beam self-cleaning from the perspective of optical wave thermalization in multimode graded-index fibers». In: *Advances in Physics: X* 8.1 (2023), p. 2228018.
- [13] M Gervaziev, **M Ferraro**, EV Podivilov, F Mangini, OS Sidelnikov, DS Kharenko, M Zitelli, MP Fedoruk, SA Babin e S Wabnitz. «Mode Decomposition Method for Investigating the Nonlinear Dynamics of a Multimode Beam». In: *Optoelectronics, Instrumentation and Data Processing* 59.1 (2023), pp. 51–61.
- [14] M Zitelli, **M Ferraro**, F Mangini e S Wabnitz. «Multimode Soliton Channels in Space Division Multiplexed Transmission Systems». In: *Optoelectronics, Instrumentation and Data Processing* 59.1 (2023), pp. 62–65.
- [15] **Mario Ferraro**, Fabio Mangini, Yann Leventoux, Alessandro Tonello, Mario Zitelli, Tigran Mansuryan, Yifan Sun, Sebastien Fevrier, Katarzyna Krupa, Denis Kharenko, Stefan Wabnitz e Vincent Couderc. «Multimode Optical Fiber Beam-By-Beam Cleanup». In: *J. Lightwave Technol.* 41.10 (2023), pp. 3164–3174.
- [16] Mario Zitelli, Vincent Couderc, **Mario Ferraro**, Fabio Mangini, Pedro Parra-Rivas, Yifan Sun e Stefan Wabnitz. «Spatiotemporal mode decomposition of ultrashort pulses in linear and nonlinear graded-index multimode fibers». In: *Photonics Research* 11.5 (2023), pp. 750–756.
- [17] Yifan Sun, Pedro Parra-Rivas, **Mario Ferraro**, Fabio Mangini, Mario Zitelli, Raphaël Jauberteau, Francesco Rinaldo Talenti e Stefan Wabnitz. «Dissipative Kerr solitons, breathers, and chimera states in coherently driven passive cavities with parabolic potential». In: *Optics Letters* 47.24 (2022), pp. 6353–6356.
- [18] **Mario Ferraro**, Maria C Crocco, Fabio Mangini, Maxime Jonard, Francesco Sangiovanni, Mario Zitelli, Raffaele Filosa, Joseph J Beltrano, Antonio De Luca, Riccardo C Barberi et al. «X-ray computed μ -tomography for the characterization of optical fibers». In: *Optical Materials Express* 12.11 (2022), pp. 4210–4222.
- [19] M Zitelli, **M Ferraro**, F Mangini e S Wabnitz. «Characterization of Multimode Soliton Self-Frequency Shift». In: *Journal of Lightwave Technology* (2022).
- [20] EV Podivilov, F Mangini, OS Sidelnikov, **M Ferraro**, M Gervaziev, DS Kharenko, M Zitelli, MP Fedoruk, SA Babin e S Wabnitz. «Thermalization of orbital angular momentum beams in multimode optical fibers». In: *Physical Review Letters* 128.24 (2022), p. 243901.
- [21] Yifan Sun, Mario Zitelli, **Mario Ferraro**, Fabio Mangini, Pedro Parra-Rivas e Stefan Wabnitz. «Multimode soliton collisions in graded-index optical fibers». In: *Optics Express* 30.12 (2022), pp. 21710–21724.
- [22] **Mario Ferraro**, Fabio Mangini, Yifan Sun, Mario Zitelli, Alioune Niang, Maria Caterina Crocco, Vincenzo Formoso, RG Agostino, Riccardo Barberi, Antonio De Luca et al. «Multiphoton ionization of standard optical fibers». In: *Photonics Research* 10.6 (2022), pp. 1394–1400.
- [23] S Wehbi, T Mansuryan, K Krupa, M Fabert, A Tonello, M Zitelli, **M Ferraro**, F Mangini, Y Sun, S Vergnole et al. «Continuous spatial self-cleaning in GRIN multimode fiber for self-referenced multiplex CARS imaging». In: *Optics Express* 30.10 (2022), pp. 16104–16114.

- [24] Antonella Nicolino, Mattia Rocco Ligato, **Mario Ferraro** e Salvatore Procopio. «TE-NORM employed as inert material for house building: a model for evaluating the radon activity enhancement». In: *Environmental Science and Pollution Research* 29.17 (2022), pp. 25020–25028.
- [25] F Mangini, M Gervaziev, **M Ferraro**, DS Kharenko, M Zitelli, Y Sun, V Couderc, EV Podivilov, SA Babin e S Wabnitz. «Statistical mechanics of beam self-cleaning in GRIN multimode optical fibers». In: *Optics Express* 30.7 (2022), pp. 10850–10865.
- [26] Mario Zitelli, Yifan Sun, **Mario Ferraro**, Fabio Mangini, Oleg Sidelnikov, Vincent Couderc e Stefan Wabnitz. «Multimode solitons in step-index fibers». In: *Optics Express* 30.4 (2022), pp. 6300–6310.
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