


PERSONAL INFORMATION **Stefan Wabnitz**

 Dipartimento di Ingegneria dell'Informazione, Elettronica e Telecomunicazioni,
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 https://web.uniroma1.it/dip_diet/users/wabnitz Scopus Author's ID: 7005398377

Sex M | **Date of birth** 17/10/1958 | **Nationality** Italian, German

Current Position: Full Professor ING-INF/03

PhD awarded less than 10 Years ago: No

Scientific Profile:

- Nonlinear optical guided wave devices / >37 years of research experience in the academic environment
- Optical signal processing />37 years of research experience in the academic environment
- Optical communication systems and devices / 6 years of industry R&D experience and >30 years of academic research
- Ultrashort pulse fiber lasers/ more than 30 years of research experience in private and public research institutes
- Optical imaging devices for biomedical applications / >5 years of experience in the frame of EU funded research projects

GOLDEN PARAGRAPH**Bibliometric Indicators:**

Publications: 777; # Citations: 15047; H index: 63 (Source: Scopus)

3 most relevant publications or patents:

- A. Pasquazi, M. Peccianti, L. Razzari, D.J. Moss, S. Coen, M. Erkintalo, Y.K. Chembo, T. Hansson, S. Wabnitz, P. Del'Haye, X. Xue, A.M. Weiner, R. Morandotti, Micro-combs: A novel generation of optical sources, Physics Reports, 729, 1-81 (2018)
- J.M.C. Boggio, D. Bodenmüller, S. Ahmed, S. Wabnitz, D. Modotto, T. Hansson, Efficient Kerr soliton comb generation in micro-resonator with interferometric back-coupling. Nat Commun 13, 1292 (2022)
- K. Krupa, A. Tonello, B.M. Shalaby, M. Fabert, A. Barthélémy, G. Millot, S. Wabnitz, V. Couderc, Spatial beam self-cleaning in multimode fibres, Nat Photonics 11, 237-241 (2017)

ROLE IN THE PROJECT To lead the development of novel optical devices and systems

WORK EXPERIENCE**2018 – Current**

Full Professor of Telecommunications

Sapienza University of Rome, DIET, Via Eudossiana 18, 00184 Rome

Main duties/responsibilities: Manager of nonlinear photonics laboratory

Sector: Academia

2007 – 2018

Full Professor of Electromagnetic Fields

University of Brescia, DII, Via Branze 38, 25123 Brescia

Main duties/responsibilities: Manager of nonlinear optical communications group
Sector: Academia

2003 – 2007

Full Professor of Physics
Université de Bourgogne, Dijon, France
Main duties/responsibilities: Manager of nonlinear optical devices group
Sector: Academia

2001 – 2003

Senior Engineer in Optical Communication Systems
Xtera Communications Inc., Allen, Texas, USA
Main duties/responsibilities: Manager of Advanced Technology Group
Sector: Industry, Telecom Sector

1999 – 2001

Senior Engineer in Optical Communication Systems
Alcatel Research and Innovation Labs, Marcoussis, France
Main duties/responsibilities: Manager of nonlinear photonics laboratory (6 Postdocs, 1 PhD student)
Sector: Industry, Telecom Sector

1996 – 1999

Full Professor of Physics
Université de Bourgogne, Dijon, France
Main duties/responsibilities: Manager of nonlinear optical devices group
Sector: Academia

1983 – 1996

Senior Researcher
Fondazione Ugo Bordoni, Rome, Italy
Main duties/responsibilities: Research on nonlinear optical communications and devices
Sector: Research Institute

EDUCATION AND TRAINING

1983-1988

PhD in Applied Electromagnetics
Ministry of Education, ITALY
Nonlinear optical communications and guided wave devices

1982-1983

MS in Electrical Engineering
California Institute of Technology, USA

1982-1983

Laurea in Electronics Engineering
Sapienza University of Rome, ITALY

PERSONAL SKILLS

Organisational / managerial skills

- leadership (currently responsible for a nonlinear photonics lab team of 7 people)

ADDITIONAL INFORMATION

**Most relevant publications
in the last 10 Years**

- S. Wehbi, T. Mansuryan, K. Krupa, M. Fabert, A. Tonello, M. Zitelli, M. Ferraro, F. Mangini, Y. Sun, S. Vergnole, H. Kano, S. Wabnitz, Vincent Couderc, Continuous spatial self-cleaning in GRIN multimode fiber for self-referenced multiplex CARS imaging, *Optics Express* 30, 16104 (2022)
- N.O. Moussa, T. Mansuryan, C.H. Hage, M. Fabert, K. Krupa, A. Tonello, M. Ferraro, L. Leggio, M. Zitelli, F. Mangini, A. Niang, G. Millot, M. Papi, S. Wabnitz, V. Couderc, Spatiotemporal beam self-cleaning for high-resolution nonlinear fluorescence imaging with multimode fiber, *Sci Rep* 11, 18240 (2021)
- K. Krupa, A. Tonello, B.M. Shalaby, M. Fabert, A. Barthélémy, G. Millot, S. Wabnitz, V. Couderc, Spatial beam self-cleaning in multimode fibres, *Nat Photonics* 11, 237-241 (2017)
- J.M.C. Boggio, D. Bodenmüller, S. Ahmed, S. Wabnitz, D. Modotto, T. Hansson, Efficient Kerr soliton comb generation in micro-resonator with interferometric back-coupling. *Nat Commun* 13, 1292 (2022)
- A. Pasquazi, M. Peccianti, L. Razzari, D.J. Moss, S. Coen, M. Erkintalo, Y.K. Chembo, T. Hansson, S. Wabnitz, P. Del'Haye, X. Xue, A.M. Weiner, R. Morandotti, Micro-combs: A novel generation of optical sources, *Physics Reports*, 729, 1-81 (2018)
- M. Cazzanelli, F. Bianco, E. Borga, G. Pucker, M. Ghulinyan, E. Degoli, E. Luppi, V. Vénard, S. Ossicini, D. Modotto, S. Wabnitz, R. Pierobon, L. Pavesi, Second-harmonic generation in silicon waveguides strained by silicon nitride, *Nat Materials* 11, 148-154 (2012)

Projects/Grants**2022-2023**

HORIZON 2022-ERC-POC 10108187

Multimode Fiber Raman Amplifier for Unrepeated Optical Communications

150000 €

2022-2024

HORIZON-MSCA-2021 101064614

Beam self-cleaning for spatiotemporal mode-locked fiber lasers

172750 €

2021-2023

H2020-MSCA-IF-2020-101023717

Nonlinear spatiotemporal light bullets: origin and stability

171473 €

2020-2023

FARE 2018-R18SPB8227

Wavefront shaping of optical beams for the control of ultrashort light pulses in multimode fibers

153979 €

2019-2021

H2020 2019-ERC-POC 874596

Wavefront Shaping System for Nonlinear Fiber-Based Microscopy and Endoscopy

150000 €

2019-2023

H2020-MSCA-ITN-2018-814147

Multiscale optical frequency combs: advanced technologies and applications
1092262 €

2017-2022

Russian Megagrant 14.Y26.31.0017
Spatio-temporal nonlinear optics of multimode and multi-core fiber systems
1600000 €

2017-2023

H2020-ERC-2016-ARG-740355
Spatiotemporal multimode complex optical systems
2084181 €

2017-2020

PRIN-2015-2015KEZNYM
Nonlinear dynamics of optical frequency combs
661232 €

2016-2019

H2020-MSCA-RISE-2015-691051
Capturing and quantitative analysis of multi-scale multi-channel diagnostic data
234000 €

2010-2012

PRIN-2008-2008MPSSNX
Nonlinear cross-polarization interactions in photonic devices and systems
84354 €

Patents

M. Zitelli, S. Wabnitz, "Mode-division multiplexed fiber Raman amplifier system and method", US Patent App. 63/284445, USPTO, Nov. 2021
Patent application by S. WEHBI, T. MANSURYAN, A. TONELLO, V. COUDERC, S. WABNITZ, Dispositif de microscopie CARS multiplex, UNIVERSITE DE LIMOGES/CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE/ALPHANOV, France N° 2113526, 2021
Patent application by G. MILLOT, V. COUDERC, K. KRUPA, A. TONELLO, S. WABNITZ, J.E. MONTAGNE, Guide d'onde multimode configuré pour générer une radiation monomode à partir d'une radiation monomode, CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE/Compagnie Industrielle des Lasers CILAS/Université de Limoges, FR2002799, 2020
Patent application by G. MILLOT, V. COUDERC, K. KRUPA, A. TONELLO, S. WABNITZ, J.E. MONTAGNE, Multimode wave guide configured to generate a single-mode radiation from a single-mode radiation, CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE/Compagnie Industrielle des Lasers CILAS/Université de Limoges, US20210296841A1, 2020
2011- V. Kozlov, N. N. Rosanov, S. Wabnitz on "Method for generation of ultrashort optical pulses"; RU 201-11-09-511, St. Petersburg University

Conferences

Invited Lectures

Bistable solitons in third-harmonic generation frequency combs, Photonics West, San Francisco 2023
Statistical mechanics of multimode fiber beams, Workshop on nonlinear photonics and applications, Helsinki 2022
Efficient soliton crystal microcomb generation by interferometric back-coupling, Workshop

on frequency combs, Brussels 2022
Walk-off solitons and singlemode spatiotemporal attractor in multimode GRIN fibers, OSA Advanced Photonics Congress, Maastricht 2022
Exotic optical effects in nonlinear multimode fibers, Laser Optics, Saint Petersburg, 2022
Extreme nonlinear optics in optical fibers, Workshop on nonlinear waves, Berlin 2022
Spatiotemporal condensation of walk-off multimode solitons, Integrable Systems and Nonlinear Dynamics, Yaroslavl 2021
Quadratic Optical Frequency Combs: Towards a New Platform for Multi-Octave Microcombs, Laser Optics, Saint Petersburg, 2020
Nonlinear multimode fiber optics: recent advances, Optics and Photonics, Nice, 2020
Dynamics of high-energy multimode Raman solitons, ICTON, Bari, 2020
Tutorial on Nonlinear Optics in Multimode Fibers, Specialty Optical Fibers, Montreal, 2020
Nonlinear optics in multimode fibers, ECOC, Dublin, 2019
Quadratic optical frequency combs, IEEE Phot., San Antonio, USA, 2019
Hydrodynamic 2D turbulence and beam self-cleaning in multimode optical fibers, Solitons, Collapses and Turbulence, Yaroslavl, 2019
Spatiotemporal dynamics in multimode nonlinear optical fibers, Advanced Electromagnetics Symposium, Lisbona, 2019
Hydrodynamic transverse condensation in multimode optical fibers, Frontiers in Nonlinear Physics, Nizhny Novgorod, 2019
Multidimensional shaping of spatiotemporal waves in multimode nonlinear fibers, ICTON, Angers, 2019
Complex Optical Pulse Shaping in Nonlinear Multimode Optical Fibers, PIERS, Rome, 2019
Nonlinear multimode fibers for high power fiber lasers, Modern Problems in Laser Physics, Novosibirsk, 2018
Spatiotemporal pulse shaping with multimode nonlinear guided waves, Laser Optics, Saint Petersburg, 2018
Nonlinear multimode fiber optics, CLEO, San José, 2018
Optical Kerr spatiotemporal dark extreme waves, Photonics West, San Francisco, 2018
Nonlinear dynamics in multimode optical fibers, Photonics West, San Francisco, 2018
Nonlinear dynamics of spatiotemporal waves in multimode fibers, Nonlinear Optics, Waikoloa, 2017
Nonlinear spatiotemporal dynamics in multimode fibers, URSI GASS, Montreal, 2017
Spatiotemporal beam dynamics in multimode nonlinear optical fibers, ICTON, Girona, 2017
Modeling of nonlinear optical frequency comb generation, Photonics North, Ottawa, 2017
Nonlinear dynamics of optical frequency combs, SPIE Optics+Optoelectronics, Prague, 2017
Microresonator optical frequency combs, Intl. School of Photonics, Erice, 2016
Spatiotemporal nonlinear beam shaping, Latin America Optics and Photonics, Medellin, 2016
Spacetime dynamics of nonlinear multimode fibers, Laser Optics, Saint Petersburg, 2016
Theory of quadratic optical frequency combs, ICTON, Trento, 2016
Stability of microresonator soliton frequency combs, Photonica, Belgrade 2015
Multicomponent rogue waves, PIERS, Prague, 2015
Optical turbulence and synchronisation in fiber lasers, EOSAM, Berlin, 2014
Nonlinear dynamics of comb generation in optical microresonators, Photonics West, San Francisco, 2014

Honours and awards

2009

Fellow of the Optical Society of America "For extensive and significant contributions to the field of nonlinear photonic devices and soliton communications"

1994

Philip Morris Prize of Italy for scientific contribution to the «Information superhighway»

1983

Moisè Ascoli Prize for the best Laurea in Electrical Engineering of 1982 from the Italian Association of Electrical Engineers, Italy

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Rome, February 10th, 2023

Signature

A handwritten signature in black ink that reads "Stefan Wabnitz". The signature is written in a cursive style with a horizontal line at the end.