

CIVIS Workshop on “Multimode Photonics”

Sapienza University of Rome, Via Eudossiana 18, August 22-25, 2022

Final Program (all times are in Central European Time)

Monday, August 22

Morning session, Sala degli Affreschi – **Stefan Wabnitz**, Chair

9:00-9:15 **Stefan Wabnitz**, Welcome and introduction

9:15-10:15 **Vilma Basilissi**, Istituto Centrale per il Restauro, and **Laura Rivaroli**, Bologna University, Italy: Optical instruments for the study of Cultural Heritage: requirements and needs to improve the conservation field

10:15-11:15 **M. Haelterman**, Université libre de Bruxelles, Belgium: The nonlinear passive optical resonator: a historical perspective

11:15-11:45 Coffee break

11:45-12:45 **R. Morandotti**, INRS, Canada: Multimode optics for affordable quantum technologies

13:00-14:00 Lunch

Afternoon session, Aula 17 – **Mario Zitelli**, Chair

14:00-15:00 **S. Ramachandran**, Boston University, USA: Nonlinear Optics meets Topological Photonics: Influence of Angular Momentum and Chirality on Fiber Nonlinear Optics

15:00-16:00 **C. Antonelli**, Università dell'Aquila, Italy: Modelling propagation in fibers for space-division multiplexed transmission

16:00-17:00 **D. Lin**, Southampton University, UK: Structured light generation in multicore fiber and few-mode fiber amplifiers and lasers (online)

Tuesday, August 23

Morning session, Aula 17 - **Yifan Sun**, Chair

9:00-10:00 **M. Guasoni**, Southampton University, UK: Four-wave mixing phenomena in multimode optical fibers

10:00-11:00 **F. Wise**, Cornell University, USA: Spatiotemporal Dynamics of Multimode Optical Pulse Generation: Toward High-Performance Ultrafast Lasers

11:00-11:30 Coffee break

11:30-12:30 **K. Krupa**, Polish Academy of Sciences, Poland: Spatiotemporal nonlinear dynamics in multimode fibers and its applications

13:00-14:00 Lunch

14:30-17:00 Excursion – Guided visit of Rome’s “Domus Aurea”- the ancient Rome house of light

Afternoon session, Aula 17 – **Stefan Wabnitz**, Chair

17:00-18:30 **Students** and **Young Researchers** fast-talk session & round-table discussion

17:00-17:10 **Karolina Stefanska**, Wroclaw University, Poland, Discretized Conical Wave in a Multimode Optical Fiber

17:10-17:20 **Tobias Hansson**, Linköping University, Sweden, Moments approach for beam dynamics in optical GRIN multimode fibers

17:20-17:30 **Minji Shi**, Aston University, UK, The impact of coupling dispersion in dual-waveguides parametric amplifiers

17:30-17:40 **Hossein Fathi**, Tampere University, Finland, Coherent Beam Combining of High Power Tapered Double-Clad Fiber Lasers

17:40-17:50 **Francesco Rinaldo Talenti**, Sapienza University, Italy, Fast dispersion tailoring of multimode photonic crystal resonators

17:50-18:00 **Iuliia Zalesskaia**, Tampere University, Finland, A double-clad ytterbium-doped tapered fiber with circular birefringence as a gain medium for structured light

20:30-23:00 Social dinner at GIOVANNI AI BOZZI, Piazza Giuditta Tavani Arquati, 107, Rome
<https://www.aibozzi.it/>

Wednesday, August 24

Morning session, Aula 17 – **Pedro Parra-Rivas**, Chair

9:00-10:00 **M. Sorel**, Glasgow University, UK: AlGaAs platform for multimode nonlinear optics

10:00-11:00 **M. Zitelli**, Sapienza Università di Roma, Italy: Multimode soliton dynamics

11:00-11:30 Coffee break

11:30-12:30 **V. Couderc**, Université de Limoges, France: Second harmonic generation in multimode optical fibers

13:00-14:00 Lunch

Afternoon session, Aula 17 – **Mario Ferraro**, Chair

14:00-15:00 **A. Picozzi**, Université de Bourgogne, France: Wave turbulence in multimode fibers and the role of disorder (online)

15:00-16:00 **D. Christodoulides**, University of Central Florida, USA: Optical thermodynamics of highly-multimoded nonlinear optical systems

16:00-16:30 Break

16:30-17:30 **G. Genty**, Tampere University, Finland: Machine learning applications to nonlinear fiber systems

17:30-18:30 **A. Mafi**, University of New Mexico, USA: Anderson Localization and Disordered Optical Fibers (online)

Thursday, August 25

Morning session, Aula 17 – **Fabio Mangini**, Chair

9:00 -10:00 **S. Babin**, Russian Academy of Sciences, Russia: Spatio-spectral effects at Raman lasing in multimode and multicore fibers (online)

10:00-11:00 **M. Leonetti**, Italian Institute of Technology, Italy: Applications of disordered photonics: a journey from transverse Anderson localization to analog optical computation

11:00-11:30 Coffee break

11:30-12:30 **D. Psaltis**, EPFL, Switzerland: Imaging and computing with multi-mode fibers (online)

13:00-14:00 lunch

Afternoon session, Aula 17 – **Raphael Jauberteau**, Chair

14:00-15:00 **F. Tani**, Max-Planck-Institut, Germany: Spatio-temporal dynamics in hollow-core fibres

15:00-16:00 **S. Wabnitz**, Sapienza Università di Roma, Italy: Exotic multimode nonlinear optics and applications

16:00-17:30 Round-table discussion, students' questionnaire and closing remarks