

CRISTINA MASOLLER**PERSONAL INFORMATION**

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EDUCATION

1999 PhD Physics, Bryn Mawr College, USA
 1991 Master Physics, Universidad de la Republica, Uruguay
 1989 Bachelor Physics, Universidad de la Republica, Uruguay

CURRENT POSITION

2018 – Full Professor (Profesora catedratica contratada), Physics Department, Universitat Politecnica de Catalunya (UPC), Spain

PREVIOUS POSITIONS

2009 – 2018 Associate Professor (Profesora agregada contratada), Physics Department, UPC, Spain
 2004 – 2009 Postdoctoral Researcher (Ramon i Cajal), Physics Department, UPC, Spain
 1986 – 2004 Teaching assistant (1986 – 1993) / Assistant Professor (1993 – 2003) / Associate Professor (2003,2004), Instituto de Física, Facultad de Ciencias, Universidad de la República, Uruguay

HONORS AND AWARDS

2015 – 2020 ICREA Academia Award, Institució Catalana de Recerca i Estudis Avançats
 2016 Fellow of the Optical Society (OSA) for “*contributions in the area of nonlinear dynamics of optical systems*”.
 2009 – 2014 ICREA Academia Award, Institució Catalana de Recerca i Estudis Avançats

ON-GOING GRANTS (as Principal Investigator)

2019 – 2022 Marie Skłodowska-Curie action (MSCA) Innovative Training Network (ITN) *Climate Advanced Forecasting of sub-seasonal Extremes* (CAFE)
 Web page: <http://www.cafes2se-itn.eu/>
 European Commission reference number: 813844
 2019 – 2021 *Complex dynamical systems and advanced data analysis tools*
 Ministerio de Ciencia, Innovación y Universidades, reference: PGC2018-099443-B-I00

PREVIOUS GRANTS (as Principal Investigator, last 10 years)

2015 – 2019 MSCA ITN *Advanced Biomedical Optical Imaging and Data Analysis* (BE-OPTICAL)¹
 Web page: www.beoptical.eu
 European Commission reference number: 675512
 Coordinator: C. Masoller
 2016 – 2018 *Complex physical and biophysical systems: towards a comprehensive view of their dynamics and fluctuations*
 Ministerio de Economía y Competitividad, reference number: FIS2015-66503-C3-2-P
 2011 – 2015 MCSA ITN *Learning about Interacting Networks in Climate* (LINC)²
 Web page: <https://climatelinc.eu/>
 European Commission reference number: 289447
 Coordinator: C. Masoller
 2010 – 2016 Three grants from European Office of Aerospace Research and Development (EOARD)
 reference numbers: FA9550-14-1-0359, FA8655-12-1-2140, FA8655-10-1-3075

¹ BE-OPTICAL was featured in the success stories section of the European Commission web page: https://ec.europa.eu/research/infocentre/article_en.cfm?artid=45736

² A summary of LINC results can be found here: <https://cordis.europa.eu/article/id/156590-upskilling-young-researchers-to-help-tackle-the-complexities-of-climate-science>

TEACHING ACTIVITIES

- 2004 – to date Courses at Universitat Politecnica de Catalunya³:
 Introductory physics (*Mechanics, Waves, Electromagnetism*) for bachelor engineering programs of School of Industrial, Aerospace and Audiovisual Engineering of Terrassa (ESEIAAT)
Nonlinear systems, chaos and control in engineering for ESEIAAT bachelor degrees
Nonlinear time-series analysis for the bachelor degree in Mathematics of the School of Mathematics and Statistics, FME, and for several master degrees of ESEIAAT
Applications of photonics technologies for several ESEIAAT master degrees
Laser systems and applications for the Master in Photonics program jointly offered by UPC and three Catalan institutions (Universitat de Barcelona, Universitat Autònoma de Barcelona and Instituto de Ciencias Fotónicas, ICFO)⁴.
- 1986 – 2004 Courses at Instituto de Física, Facultad de Ciencias, Universidad de la República, Uruguay: Introductory physics courses for bachelor, master and PhD degrees.

SUPERVISION OF GRADUATE STUDENTS

- 06/2011 J. Zamora Munt, *Nonlinear and stochastic dynamics of semiconductor lasers: modulation, transient dynamics and synchronization* (co-supervised with J. Garcia Ojalvo)
- 02/2014 S. Perrone, *Exploiting nonlinearity and noise in optical tweezers and semiconductor lasers: from resonant damping to stochastic logic gates and extreme pulses* (co-supervised with R. Vilaseca)
- 06/2014 A. Aragonese, *Experimental study of feedback-induced dynamics in semiconductor lasers: from symbolic analysis to subwavelength position sensing* (co-supervised with M. C. Torrent)
- 02/2015 I. Deza, *Climate networks constructed by using information-theoretic measures and ordinal time-series analysis* (co-supervised with M. Barreiro)
- 06/2015 G. Tirabassi, *Disentangling climate interactions and inferring tipping points by using complex networks*
- 07/2015 T. Sorrentino, *Experimental and numerical study of the symbolic dynamics of modulated semiconductor lasers with optical feedback* (co-supervised with M. C. Torrent)
- 03/2017 C. Quintero-Quiroz, *Temporal correlations and dynamical transitions in semiconductor lasers with optical feedback* (co-supervised with M. C. Torrent)
- 04/2019 D. Zappala, *Hilbert analysis of air temperature dynamics*
- 12/2019 D. Halpaap, *Experimental study of speckle generated by semiconductor light sources: application in double pass imaging* (co-supervised with M. Vilaseca)
- 02/2020 P. Amil, *Machine learning methods for the characterization and classification of complex data*
- 02/2020 M. Masoliver, *Neuronal encoding and transmission of weak periodic signals*

SCIENTIFIC ACTIVITIES

Biometric indicators (data from Web of Science)

H index: 33. I have published more than 170 articles (52 in the last 5 years) that have received more than 3800 citations⁵.

Book

Networks in Climate, by H. A. Dijkstra, E. Hernandez-Garcia, C. Masoller, M. Barreiro, Cambridge University Press 2019, ISBN 9781316275757. This book summarizes the results of the LINC project.

Patent

Image processing method for detecting glaucoma in subject. Patent number: WO2019116074-A1, date: 20/6/2019, inventors: P. Amil, E. Arrondo, C. Salinas, C. Masoller, U. Parlitz, protected in EU and USA.

Editorial activity

Editor of *Chaos, Solitons & Fractals* (Elsevier, 2019 – 2021), impact factor 2019: 3.764. This journal is in the First Quartile (Q1) in all the categories in which is indexed: Statistical and Nonlinear Physics, General Mathematics, Applied Mathematics, General Physics and Astronomy.

³ Lecture notes of the courses imparted in the last years can be found here: <http://www.fisica.edu.uy/~cris/teaching2.htm>

⁴ <https://photonics.masters.upc.edu/en>

⁵ Several papers have attracted the attention of the press. Detailed information can be found here: http://www.fisica.edu.uy/~cris/media_attention.htm