

## Curriculum Vitae

Cristina Masoller  
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Departament de Física  
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Researcher ID: [M-3696-2014](#)  
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Google scholar: <http://scholar.google.com/citations?user=esTS9GsAAAAJ>  
wikipedia: [https://es.wikipedia.org/wiki/Cristina\\_Masoller](https://es.wikipedia.org/wiki/Cristina_Masoller)

Place and date of birth: Montevideo, Uruguay, 22/2/1963  
Citizenship: Uruguayan and Italian

**Research topics:** Nonlinear dynamics, complex systems and data analysis.

### Education

BSc (1989) MSc (1991) in Physics from Universidad de la República, Uruguay.  
PhD (1999) in Physics from Bryn Mawr College, Pennsylvania, USA.

### Scientific Vita

2018 – to date Profesora catedrática, Universitat Politècnica de Catalunya.  
2009 – 2018 Profesora agregada, Universitat Politècnica de Catalunya.  
2004 – 2009 “Ramon i Cajal” Researcher, Universitat Politècnica de Catalunya  
2003 – 2004 Associate Professor, Universidad de la República, Uruguay  
1999 – 2004 Several postdoctoral research stays in France, Spain and U.K.  
1993 – 2003 Assistant Professor, Universidad de la República, Uruguay.  
1986 – 1993 Teaching Assistant, Universidad de la República, Uruguay.

### Honors and Awards

2016 Elected Fellow of the Optical Society (OSA) for “*contributions in the area of nonlinear dynamics of optical systems*”.

2015 ICREA Academia Award, Institució Catalana de Recerca i Estudis Avançats

2014 Four research trams (sexenios) recognized by AQU Catalunya (periods: 1990-1995, 1996-2001, 2002-2007, 2008-2013).

2010 Acreditació de Recerca Avançada de L'Agència per a la Qualitat del Sistema Universitari de Catalunya (AQU Catalunya Professor Habilitation).

2009 ICREA Academia Award, Institució Catalana de Recerca i Estudis Avançats

2008 Program I3, Certificación de Trayectoria Investigadora Destacada, Agencia Nacional de Evaluación y Prospectiva (ANEP), Madrid, Spain 23/10/2008.

## Teaching activity

*Undergraduate courses at Escola Superior d'Enginyeries Industrial, Aeroespacial i Audiovisual de Terrassa (ESEIAAT), UPC: Introductory physics (Physics I, Physics II and Physics III, theory, problem and laboratory classes, since 2004 – to date); Nonlinear systems, chaos and control in engineering (since 2014 – to date, in English, Lecture notes are available in my [web page](#)).*

*Graduate courses (in English) for the Master in Photonics, UPC: Electromagnetic Waves (2007 – 2009 -discontinued), Computing in Photonics (2010 – 2013 -discontinued), Laser Systems and Applications (2012 – to date). Lecture notes are available in my [web page](#).*

*1986–2004: Graduate and undergraduate courses (Introductory physics, electromagnetic theory, nonlinear optics) at Facultad de Ciencias, Universidad de la República, Montevideo, Uruguay.*

## Research Grants

### a) Principal Investigator

2007–2009: *Nonlinear dynamics of novel types of semiconductor lasers*

Air Force Office of Scientific Research, European Office of Aerospace Research & Development (EOARD), USA  
Reference number: FA9550-07-1-0238.

2010–2011: *Stochastic and nonlinear effects in semiconductor lasers*

EOARD, Reference number: FA8655-10-1-3075.

2012–2013: *Spiking excitable semiconductor laser as optical neurons: dynamics, clustering and global emerging behaviors*

EOARD, Reference number: FA8655-12-1-2140.

2014–2015: *Semiconductor laser complex dynamics: from optical neurons to rogue waves*

EOARD, Reference number: FA9550-14-1-0359.

2011–2015: *Marie Curie Initial Training Network: Learning about Interacting Networks in Climate (LINC)*

Web page: [www.climatelinc.eu](http://www.climatelinc.eu)

European Commission reference number: FP7-PEOPLE-2011-ITN-289447.

ITN Coordinator: Cristina Masoller

2015–2019: *MSCA Innovative Training Network: Advanced Biomedical Optical Imaging and Data Analysis (BE-OPTICAL).*

Web page: [Beoptical.eu](http://Beoptical.eu)

European Commission reference number: H2020-675512.

ITN Coordinator: Cristina Masoller

2016-2018: *Complex physical and biophysical systems: towards a comprehensive view of their dynamics and fluctuations*

Ministerio de Economía y Competitividad, Spain

Reference number: FIS2015-66503-C3-2-P (MINECO/FEDER)

Project coordinated with Universitat Pompeu Fabra (J. Garcia Ojalvo) and Universitat de Barcelona (M. Ibañez). Principal investigator at UPC: Cristina Masoller.

2019-2022: *MSCA Innovative Training Network: Climate Advanced Forecasting of sub-seasonal Extremes (CAFE)*

European Commission reference number: H2020-813844.

Principal investigator at UPC: Cristina Masoller, ITN Coordinator: A. Corral (UAB)

## **b) Participation in research grants**

2009–2011: *Ondas de luz en medios lineales y no lineales en el espacio*

Ministerio de Ciencia e Innovación, Spain

Reference number: FIS2008-06024-C03-02

Principal Investigator: K. Staliunas

2010–2012: *Nonlinear and stochastic dynamics in physical and biophysical systems*

Ministerio de Ciencia e Innovación, Spain

Reference number: FIS2009-13360-C03-02

Principal Investigator: J. M. Sancho Herrero

2013–2015: *Stochasticity in Nonlinear Complex Systems*

Ministerio de Economía y Competitividad, Spain

Reference number: FIS2012-37655-C02-01.

Principal Investigator: J. García Ojalvo

2012–2016: *Marie Curie Initial Training Network Neural Engineering Transformative Technologies (NETT)*.

European Commission reference number: FP7-PEOPLE-2011-ITN-289146.

Principal Investigator at UPC: J. García Ojalvo, ITN coordinator: S. Coombes (UK)

2015-2017: *Network on dynamics and synchronization on complex networks (IberSinc)*

Web page: <http://deim.urv.cat/~alephys/IBERSINC/>

Ministerio de Economía y Competitividad, Spain

Reference number FIS2015-71929-REDT.

## **Supervised PhD Theses** (PhD program on Applied and Computational Physics, UPC)

1. TITLE: Nonlinear and stochastic dynamics of semiconductor lasers: modulation, transient dynamics and synchronization  
STUDENT: Jordi Zamora Munt  
YEAR: June 2011 (co-supervisor: J. Garcia-Ojalvo)
2. TITLE: Exploiting nonlinearity and noise in optical tweezers and semiconductor lasers: from resonant damping to stochastic logic gates and extreme pulses  
STUDENT: Sandro Perrone  
YEAR: February 2014 (co-supervisor: R. Vilaseca)
3. TITLE: Experimental study of feedback-induced dynamics in semiconductor lasers: from symbolic analysis to subwavelength position sensing

STUDENT: Andres Aragonese  
YEAR: June 2014 (co-supervisor: M. C. Torrent)

4. TITLE: Climate networks constructed by using information-theoretic measures and ordinal time-series analysis  
STUDENT: Ignacio Deza  
YEAR: February 2015 (co-supervisor: M. Barreiro)
5. TITLE: Disentangling climate interactions and inferring tipping points by using complex networks  
STUDENT: Giulio Tirabassi  
YEAR: June 2015
6. TITLE: Experimental and numerical study of the symbolic dynamics of modulated semiconductor lasers with optical feedback  
STUDENT: Taciano Sorrentino  
YEAR: July 2015 (co-supervisor: M. C. Torrent)
7. TITLE: Temporal correlations and dynamical transitions in semiconductor lasers with optical feedback.  
STUDENT: Carlos Quintero-Quiroz  
YEAR: March 2017 (co-supervisor: M. C. Torrent)

*Ongoing:*

TOPIC: Hilbert analysis of atmospheric dynamics  
STUDENT: Dario Zappala  
START: June 2015

TOPIC: Incoherent light sources for speckle reduction in double pass ocular imaging  
STUDENT: Donatus Halpaap (co-supervisor: Meritxell Vilaseca)  
START: June 2016

TOPIC: Signal encoding and transmission by noisy coupled neurons  
STUDENT: Maria Masoliver  
START: September 2016

TOPIC: Novel methods for the characterization and classification of complex retina images  
STUDENT: Pablo Amil  
START: September 2016

*Postdoctoral researchers*

Cristian Bonatto (2011), Jordi Zamora (2013), Laura Carpi (2014, 2015), Jose M. Aparicio Reinoso (2015), Carlos Quintero-Quiroz (2017, 2018).

*Undergraduate students*

Nuria Martinez Alvarez, Carles Calafell García (final undergraduate projects 2015)  
Tian Jin, Chen Siyu (final undergraduate projects 2017)  
Mattia Panozzo (master thesis 2017)

## External PhD examiner

- Cristina Martinez Gonzalez, Universitat Politecnica de Catalunya, 2009 (Supervisors: J. García Ojalvo and M. C. Torrent).
- David Curtin, University College Cork, Ireland, 2009 (Supervisors: J. McInerney and G. Huyet).
- Jordi Tiana Alsina, Universitat Politecnica de Catalunya, 2011 (Supervisors: J. García Ojalvo and M. C. Torrent).
- Dhiraj Kumar, Universitat Politecnica de Catalunya, 2011 (Supervisor: Francesc Rocabenbosch).
- Werner Coomans, Vrije Universiteit Brussel, Belgium, 2012 (Supervisors: J. Danckaert and L. Gelens).
- Belen San Cristobal, Universitat Politecnica de Catalunya, 2013 (Supervisors: J. García Ojalvo and J. M. Sancho).
- Andrea Karsaklian dal Bosco, Supélec, Metz, France, 2013 (Supervisors: D. Wolfersberger and M. Sciamanna).
- Nicolas Rubido, University of Aberdeen, U.K., 2014 (Supervisors: M. S. Baptista and C. Grebogi).
- Alfredo Campos Mejia, Centro de Investigaciones en Optica, Mexico, 2015 (Supervisor: Alexander Pisarchik).
- Neus Oliver, Universitat de les Illes Balears, Spain, 2015 (Supervisor: Ingo Fischer).
- Enrico Ser Giacomi, Universitat de les Illes Balears, Spain, 2015 (Supervisor: Emilio Hernandez-García).
- Alessandro Barardi, Universitat Politecnica de Catalunya, 2016 (Supervisor: Jordi Garcia Ojalvo)
- Daniel Malagarriga i Guasch, Universitat Politecnica de Catalunya, 2016 (Supervisors: A. Pons, J. Garcia Ojalvo, A. E. P. Villa)
- Gaetan Friart, Universite Libre de Bruxelles, 2017 (Supervisors: T. Erneux and G. Verschaffeit)
- Maciej Jedynek, Universitat Politecnica de Catalunya, 2017 (Supervisors: J. Garcia Ojalvo, A. Pons)
- Nikola Jajcay, Charles University, Czech Republic, 2018 (Supervisor: M. Palus)
- Arindam Saha, Carl Von Ossietzky Universitat Oldenburg, 2018 (Supervisor: U. Feuldel)

## Other juries

- Expert evaluator for W2 Professorship (TU Berlin, Germany, 2015).
- Member of the jury of Habilitation à Diriger des Recherches (HDR, Université Paris Sud, France, June 2015).
- Member of the IUPAP C17 Young Scientists Prize committee (2013, 2015 & 2017).
- Member of the Adolph Lomb Medal Committee, Optical Society (OSA, 2017 & 2018).
- Member of the Erdos-Renyi Prize Committee in network science (2018).

## Member of scientific committees

- [LAWNP 2007](#), Arica, Chile, October 2007; [LAWNP 2011](#), San Luis Potosi, Mexico, October 2011; [LAWNP 2013](#), Carlos Paz, Argentina, October 2013 and [LAWNP 2015](#), Cartagena, Colombia, September 2015.
- Conference on Lasers and Electro-Optics (CLEO/EUROPE 2005, 2007, 2009 and 2011), Munich, Germany.
- International Semiconductor Laser Conference (ISLC 2008) Sorrento, Italy, September 2008; ISLC 2010, Kyoto, Japan, September 2010 and ISLC 2012, San Diego, US, October 2012.
- International Workshop on Physics and Applications of Semiconductor Lasers ([PHASE](#)), Metz, France, March 2007.
- 5th International Conference on Physics and Control (PhysCon), Leon, Spain, September 2011.
- Dynamics Days South America (2012, Cartagena, Colombia, and 2014, Viña del Mar, Chile).
- XVIII Conference on Non equilibrium Statistical Mechanics and Nonlinear Physics ([MEDYFINOL 2014](#)), Maceió, Brazil, October 2014.
- [European Semiconductor Laser Workshop](#), Madrid, September 2015.
- [Extreme Events in Complex Optical Systems \(EECOS\)](#), Buenos Aires, Argentina, December 2015.
- Conference on Semiconductor Lasers and Laser Dynamics, in [Photonics Europe](#), Brussels, Belgium, April 2016.
- 26th IUPAP International Conference on Statistical Physics, [STATPHYS 26](#), Lyon, France, July 2016 (Topic Committee on Nonlinear Physics).
- OSA Latin America Optics & Photonics Conference ([LAOP](#)), Medellin, Colombia, August 2016 (Topic Committee on Nanophotonics and Metamaterials).

- Sixth International Conference on Complex Networks & Their Applications, Lyon, France, 2017.
- [Mapping Complexity Foundations and Applications of Network Geometry](#) (MACFANG), Barcelona, November 2017.
- Conference on Semiconductor Lasers and Laser Dynamics, in [Photonics Europe](#), Strasbourg, France, April 2018.
- International Conference on Network Science (NetSci), Paris, France, June 2018.
- 15<sup>th</sup> Experimental Chaos and Complexity Conference ([ECC15](#)), Madrid, June 2018.
- [XXII Congreso de Física Estadística](#) (FisEs'18), Madrid, Spain, October 2018.
- [Seven International Conference on Complex Networks & Their Applications](#), Cambridge, U.K., December 2018.
- Latin American Conference on Complex Networks ([LANET](#)), Medellin, Colombia, August 2019.

#### **Other committees**

- Member *PhD program committee Computational and Applied Physics* of Universitat Politècnica de Catalunya, in representation of the research group DONLL (2011-2018).
- [IUPAP C17 Commission on Laser Physics and Photonics](#) (2011-2017).
- Spanish representative in the Management Committee of the [COST MP 1403 Nanoscale Quantum Optics](#) (2014-2018).

#### **Reviewer of grant proposals (last 5 years)**

- Foundation for Polish Science, IRAP PLUS 2018.
- Research Executive Agency (REA), European Commission: Calls FP7-PEOPLE-2012-IEF-IIF-IOF, FP7-PEOPLE-2013-IEF-IIF-IOF, H2020-MSCA-IF-2015, H2020-MSCA-IF-2016, H2020-MSCA-IF-2018.
- German Research Foundation (DFG): Research proposals Call 2013; Collaborative Research Centre, (CRC), proposal of the “Technische Universität Berlin” for further granting of CRC 910, Berlin 2014 & 2018.
- Engineering and Physical Sciences Research Council (EPSRC Centres for Mathematical Sciences in Healthcare, UK, 2018).
- Agencia Nacional de Evaluación y Prospectiva (ANEP, Spain): Ramon and Cajal and Juan de la Cierva, Madrid 2009; Plan Nacional R&D 2009, 2010 and 2011; Postdoctoral fellowships, Madrid 2014; Juan de la Cierva, Madrid 2015.

- Research Foundation Flanders (Fonds Wetenschappelijk Onderzoek, FWO): postdoctoral fellows (2013, 2014) and research proposals, 2013 and 2015.
- Superior Council of the National Fund for Scientific & Technological Development (FONDECYT, Chile): Regular Funding Competition 2011, 2014 and 2015.
- CNPq, Brazil, INCT Program (Programa Institutos Nacionais de Ciência e Tecnologia) 2015.
- The Royal Society (UK): International Exchanges Scheme applications, 2012 and 2014.
- The German-Israeli Foundation for Scientific Research and Development (GIF): Research Proposals 2011; Young Scientists Program, 2014.
- Agencia Nacional de Promoción Científica y Tecnológica, Argentina: Proyectos de Investigación, Científica y Tecnológica, PICT 2013.

### Member of Editorial Boards

Member of the Editorial Advisory Board of the journal Chaos (term ending December 2020)

### Referee for Scientific Journals

Nature Physics, Nature Communications, Physical Review Letters, Plos One, EPL, New Journal of Physics, Physical Review A, Physical Review E, Physics Letters A, Physica D, Optics Letters, Journal of the Optical Society of America B, Journal of Optics B, Optics Communications, Photonics Journal, IEEE Journal of Quantum Electron., IEEE Journal of Selected Topics in Quantum Electronics, Photonics Technology Letters, Optics Express, etc.

### Conference Presentations (last 5 years, the presentations are available [here](#))

- SIAM Conference on Dynamical Systems, minisymposium on delayed stochastic systems, Snowbird, Utah, USA, May 2013, **invited talk**.
- XXXIII Dynamics Days Europe Madrid, Spain, June 2013, **plenary invited talk**.
- 14th Workshop on Instabilities and Non-equilibrium Structures, Viña del Mar, Chile, December 2013, **invited talk**.
- Workshop on Abnormal Wave Events, Nice, France, June 2014, **invited talk**.
- Dynamics Days Asia Pacific 08 (DDAP 08), Chennai, India, July 2014, **invited talk**.
- Dynamics Days Europe 2014, Bayreuth, symposium on extreme events, Germany, September 2014, **invited talk**.
- Short Thematic Program on Delay Differential Equations, The Fields Institute, Toronto, Canada, May 2015, **invited talk**.



- SIAM Conference on Dynamical Systems, minisymposium on rare events in stochastic systems, Snowbird, Utah, USA, May 2015, **invited talk**.
- CLEO/EQEC EUROPE 2015, Munich, Germany, June 2015, contributed talk.
- Advanced computational and experimental techniques in nonlinear dynamics, Cusco, Peru, August 2015, **invited talk**.
- European semiconductor laser workshop, Madrid, Spain, September 2015, contributed talk.
- Analysis of dynamic networks and data driven modeling of the climate (DyNeMo-Clim), Potsdam, Germany, October 2015, **invited talk**.
- Extreme events in complex optical systems (EECOS), Buenos Aires, Argentina, December 2015, contributed talk
- XV International Workshop on Instabilities and Nonequilibrium Structures, Valparaiso, Chile, December 2015, **invited talk**.
- 4th International Conference on Complex Dynamical Systems and Applications (CDSA 2016), Durgapur, India, February 2016, **invited talk**.
- International Workshop on Nonlinear Complex Dynamical Systems, Kolkata, India, February 2016, **invited talk**.
- Workshop on Generalized Network Structures and Dynamics, Columbus, Ohio, USA, March 2016, **invited talk**.
- Workshop on Critical and Collective Effects in Graphs and Networks (CCEGN), Moscow Institute of Physics and Technology, April 2016, **invited talk**.
- Workshop on Extreme Events and Rogue Waves, Bad Honnef, Germany, May 2016, **invited talk**.
- Dynamics Days Europe 2016, Corfu, Greece, June 2016, contributed talk.
- Workshop on Nonlinear Dynamics in Semiconductor Lasers (NDSL 2016), WIAS Institute, Berlin, Germany, June 2016, **invited talk**.
- 30 Years of Nonlinear Dynamics in Geosciences, Rhodes, Greece, July 2016, contributed talk.
- Volga Neuroscience Meeting 2016, St. Petersburg-Nizhny Novgorod, Russia, July 2016, **invited talk**.
- Workshop on Pattern Dynamics in Nonlinear Optical Cavities, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, August 2016, **invited talk**.
- Workshop on Advances in the collective behaviour of complex systems (in honor of the 60th Anniversary of Prof. Arkady Pikovsky), University of Potsdam, Germany, September 2016, **invited talk**.

- Workshop on Network Techniques to Look at Transition Phenomena (TransNet), Satellite at Conference in Complex Systems 2016 (CCS 2016), Amsterdam, The Netherlands, September 2016, **invited talk**.
- Workshop on Multistability and Tipping: From Mathematics and Physics to Climate and Brain, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, October 2016, **invited talk**.
- Frontiers in Optics / Laser Science 2016, Rochester, USA, October 2016, contributed talk.
- Dynamics Days Latin America and the Caribbean, Puebla, Mexico, October 2016, **invited talk**.
- Medyfinol 2016, Valdivia, Chile, December 2016, **invited talk**.
- Workshop on Nonlinear Waves and Turbulences in Optics and Hydrodynamics, Berlin, Germany, March 2017, **invited talk**.
- Second workshop of Ibersinc II Network, Madrid, Spain, April 2017, contributed talk.
- BE-OPTICAL Second School for PhD students, Torun, Poland, May 2017, lecturer.
- Workshop on Computational Neuroscience and Optical Dynamics (CNOD), Nice, France, May 2017, **invited talk**.
- SIAM Dynamical Systems, Snowbird, Utah, US, May 2017, **invited talk**.
- Workshop on Recent Advances in Nonlinear Dynamics and Complex Structures: Fundamentals and Applications (RANDCoST), Oldenburg, Germany, May 2017, **invited talk**.
- Conference on Nonlinear Dynamics of Electronic Systems (NDES), Zernez, Switzerland, June 2017, **plenary invited talk**.
- CLEO EUROPE, Munich, Germany, June 2017, contributed talk.
- 19th International Conference on Transparent Optical Networks (ICTON), Girona, Spain, July 2017, **invited talk**.
- Workshop on Nonlinear Wave Physics (NWP), Moscow, Russia, July 2017, **invited talk**.
- European semiconductor laser workshop (ESLW 2017), Denmark, September 2017, contributed talk.
- CRITICS ITN 3rd Workshop, Valladolid, Spain, September 2017, **invited talk**.
- Latin American Conference on Complex Networks (LANET), Puebla, Mexico, September 2017, **plenary invited talk**.
- Mapping Complexity Foundations and Applications of Network Geometry (MACFANG), Barcelona, November 2017, contributed talk.

- Complex Networks 2017, Lyon, France, November 2017, contributed talk.
- BIFI International conference 2018: “Complexity, Networks & Collective Behavior”, Zaragoza, February 2018, contributed talk.
- ICTP-SAIRF School Nonlinear Time Series Analysis and Complex Networks in the Big Data Era, Sao Paulo, Brazil, February 2018, lecturer and co-organizer.
- Extremes 2018, The Volkswagen Foundation, Hannover, Germany, March 2018, **invited tutorial and invited talk.**
- Analysis and Modeling of Complex Oscillatory Systems (AMCOS), Barcelona, Spain, March 2018, **invited talk.**
- Encontro de Outono da Sociedade Brasileira de Física (EOSBF), Iguazu, Brazil, May 2018, **invited talk.**
- Nonlinear Dynamics of Electronic Systems, Acireale, Sicily, Italy, June 2018, **invited talk.**
- Advanced Photonics Conference, Zurich, Switzerland, July 2018, **invited talk** in Nonlinear Photonics workshop.
- International Symposium on Nonlinear Theory and Its Applications (NOLTA), Tarragona, Spain, September 2018, contributed talks.
- European Semiconductor Laser Workshop (ESLW), Bari, Italy, September 2018, contributed talk.
- 2nd International Workshop on Neurodynamics (Ndy’18), Castro Urdiales, Spain, September 2018, contributed talk.

### Organization of Scientific Events

- [13th Conference on Nonequilibrium Statistical Mechanics and Nonlinear Physics \(MEDYFINOL'02\)](#), Colonia del Sacramento, Uruguay, December 2002.
- [First ‘Rio de la Plata’ Workshop on noise, chaos and complexity in lasers and nonlinear optics](#), Colonia del Sacramento, Uruguay, December 2003.
- [Second ‘Rio de la Plata’ Workshop on noise, chaos and complexity in lasers and nonlinear optics](#), Colonia del Sacramento, Uruguay, December 2005.
- [Third ‘Rio de la Plata’ Workshop on noise, chaos and complexity in lasers and nonlinear optics](#), Punta del Este, Uruguay, December 2007.
- XVI Non-Equilibrium Statistical Mechanics and Nonlinear Physics ([MEDYFINOL'08](#)), Punta del Este, Uruguay, December 2008.
- [Fourth ‘Rio de la Plata’ Workshop on Laser Dynamics and Nonlinear Photonics](#), Piriapolis, Uruguay, December 2009.

- [Fifth 'Rio de la Plata' Workshop on Laser Dynamics and Nonlinear Photonics](#), Colonia del Sacramento, Uruguay, December 2011.
- Two mini-symposia Nonlinear Dynamics in Lasers: Fundamental Issues and Novel Applications I and II, held within Dynamics Days Europe, Madrid, Spain, June 2013.
- Two-week [School on Nonlinear Optics and Nanophotonics](#) for PhDs and posdocs, held at ICTP-SAIFR, San Paulo, Brazil, November 2013.
- [Sixth 'Rio de la Plata' Workshop on Laser Dynamics and Nonlinear Photonics](#), Montevideo, Uruguay, December 2013.
- Satellite workshop "LINC – learning about interacting networks in climate", within the European Conference on Complex Systems ([ECCS'14](#)), Lucca, Italy, September 2014.
- [Conference on Complex Networks and Climate Variability](#), Vienna, Austria, April 2015.
- Symposium on Advanced time-series analysis: novel tools for the study of complex systems, Dynamics Days Europe, Corfu, Greece, June 2016
- Symposium on Synchronization and Extreme Events in Complex Systems, Dynamics Days Latin America and the Caribbean, Puebla, Mexico, October 2016
- Symposium on [Data-driven approaches for distinguishing direct from indirect interactions in networks](#), SIAM Conference on Dynamical Systems, Snowbird, Utah, USA, May 2017
- ICTP-SAIFR school in [Nonlinear Time Series Analysis and Complex Networks in the Big Data Era](#), San Paulo, Brazil, 19 February to 5th March 2018.
- Workshop on [Predicting transitions in complex systems](#) (PRETRA 2018), Max Plank Institute for Complex Systems, Dresden, Germany, April 2018.

*Editor of conference proceedings*

- Proceedings of the [XIII Conference on Non-Equilibrium Statistical Mechanics and NonLinear Physics](#), Physica A vol. 327, 2003.
- [Topics on Non-equilibrium statistical mechanics and nonlinear physics](#), Philosophical Transactions of the Royal Society A, vol. 367, 2009.
- [Proceedings of the XVI Conference on Non-Equilibrium Statistical Mechanics and Nonlinear Physics](#), International Journal of Bifurcations and Chaos, vol. 20, 2010.
- [Topical Issue on Laser Dynamics and Nonlinear Photonics](#), European Physical Journal D, Vol. 28, No. 2, June 2010.
- Proceedings of the Fifth Workshop on Laser Dynamics and Nonlinear Photonics, [IEEE Conference Publication 2012](#).

- Proceedings of the Sixth Workshop on Laser Dynamics and Nonlinear Photonics, [IEEE Conference Publication 2014](#).

### Member of Professional Societies

European Physical Society  
The Optical Society (OSA)  
[complexitat.cat](http://complexitat.cat)

### Scientific Publications (*citations >3100, ISI h-index: 29*)

1. [C. Masoller](#), A. Sicardi, and L. Romanelli, "Regular and chaotic behavior in the new Lorenz system", Phys. Lett. A **167**, 185-190 (1992). [Download](#)
2. [C. Masoller](#), A. Sicardi, and C. Cabeza, "Chaotic properties of the coherence collapsed state of laser diodes with optical feedback", Opt. Commun. **100**, 331-340 (1993). [Download](#)
3. [C. Masoller](#), "Coexistence of attractors in a laser diode with optical feedback from a large external cavity", Phys. Rev. A **50**, 2569-2578 (1994). [Download](#)
4. [C. Masoller](#), A. Sicardi, and L. Romanelli, "Characterization of strange attractors of Lorenz's model of general circulation of the atmosphere", Chaos, Solitons & Fractals **6**, 357-366 (1995). [Download](#)
5. [C. Masoller](#), A. Sicardi, and C. Cabeza, "The nonlinear gain and the onset of chaos in a semiconductor laser with optical feedback", Chaos, Solitons & Fractals **6**, 347-356 (1995). [Download](#)
6. [C. Masoller](#), C. Cabeza, and A. C. Sicardi, "Effect of the nonlinear gain in the visibility of a semiconductor laser with incoherent feedback in the coherence collapsed regime", IEEE J. Quantum Electron. **31**, 1022-1028 (1995). [Download](#)
7. [C. Masoller](#), "Effect of the external cavity length in the dynamics of a semiconductor laser with optical feedback", Opt. Commun. **128**, 363-376 (1996). [Download](#)
8. A. Figliola and [C. Masoller](#), "Feedback-induced destabilization of a laser diode using wavelets", Phys. Rev. A **56**, 1492-1496 (1997). [Download](#)
9. [C. Masoller](#), "Implications of how the linewidth enhancement factor is introduced on the Lang and Kobayashi model", IEEE J. Quantum Electron. **33**, 796-803 (1997). [Download](#)
10. [C. Masoller](#), "Comparison of the effects of nonlinear gain and weak optical feedback on the dynamics of semiconductor lasers", IEEE J. Quantum Electron. **33**, 804-814 (1997). [Download](#)
11. [C. Masoller](#), "Spatio-temporal dynamics in the coherence collapsed regime of semiconductor lasers with optical feedback", Chaos **7**, 455-462 (1997). [Download](#)
12. [C. Masoller](#) and N. B. Abraham, "Stability and dynamical properties of the coexisting attractors of an external cavity semiconductor laser", Phys. Rev. A **57**, 1313-1322 (1998). [Download](#)

13. C. Masoller and N. B. Abraham, "Stability and modulation properties of a semiconductor laser with weak optical feedback from a distant reflector", *Quantum Semiclass. Opt.* **10**, 519-534 (1998). [Download](#)
14. C. Masoller, A. Figliola, M. Giudici, J. R. Tredicce and N. B. Abraham, "Wavelet analysis of low frequency fluctuations of a semiconductor laser", *Opt. Commun.* **157**, 115-120 (1998). [Download](#)
15. C. Masoller and N. B. Abraham, "Polarization dynamics in VCSELs with optical feedback through a quarter-wave plate", *Appl. Phys. Lett.* **74**, 1078-1080 (1999). [Download](#)
16. C. Masoller, N. B. Abraham, "Low frequency fluctuations in vertical-cavity surface-emitting semiconductor lasers with moderate optical feedback", *Phys. Rev. A* **59**, 3021-3031 (1999). [Download](#)
17. S. Varela, C. Masoller, and A. C. Sicardi, "Numerical simulations of the effect of noise on a delayed pitchfork bifurcation", *Physica A* **283**, 228-232 (2000). [Download](#)
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#### **Media attention**

Our article in [Optical Rogue Waves](#) (PRL 2011) was featured in the Research Highlights of [Nature Photonics](#) (Vol. 5, No. 10, Page 571) and in [Optics and Photonics News](#) (February 2012).

The ITN [LINC](#) was featured in Terrassa newspaper ([June 2012](#) and [November 2015](#)).

Our article in [Scientific Reports](#) (2013) was featured in the printed edition of Terrassa newspaper ([June](#) and [July 2013](#)) and in the digital edition of the national newspaper [El Periodico](#). The first author, Andres Aragoneses, was [interviewed by the radio and TV Terrassa](#).

Our article in [Scientific Reports](#) (2014) was featured in the printed edition of [Terrassa newspaper](#) (September 2014) and in the digital edition of [Investigacion y Ciencia](#). The first author, Andres Aragoneses, was [interviewed by TV Terrassa](#).

Our article in [Scientific Reports](#) (2016) was featured in the printed edition of the *Revista de la Real Sociedad Española de Física* (RdF Puntos de Interes, Octubre-diciembre 2016).

ITN BE-OPTICAL was featured in national and local newspapers (November 2016): [La Vanguardia](#), [El Periodico](#), [Diario de Terrassa](#) and in the [EU research web page](#): “*Focusing on the next major advance in medical imaging*”.

Our article in [Nature Communications](#) attracted national and international attention (February 2017): [Printed version “Diario de Girona”](#); [Printed versión “Diario de Terrassa”](#); [La Vanguardia](#); [El Periodico](#); [uypress](#).

Our paper in [Earth System Dynamics](#) was featured in [La Vanguardia](#), [El Periodico](#), [Antena3](#) (6/18).