

Prof. Yamir Moreno



CONTACT INFORMATION	University of Zaragoza Institute for Biocomputation and Physics of Complex Systems (BIFI) Edificio I+D, Mariano Esquillor s/n Campus Rio Ebro, Zaragoza 50018, Spain	Work: +34-976-762993 Fax: +34-976-762990 E-mail: yamir.moreno@gmail.com WWW: cosnet.bifi.es/~yamir
RESEARCH INTERESTS	Structure and Dynamics of Complex Systems and Networks, Statistical Physics: Complex Systems and Networks, Multilayer Systems, Mathematical Biology, Epidemiology, Structure and Dynamics of Online Social Systems, Evolutionary Game Theory, Human Behavior (experiments), Mutualistic Ecosystems, Synchronization and other nonlinear phenomena.	
CURRENT ACADEMIC APPOINTMENTS	Director, Institute for Biocomputation and Physics of Complex Systems (BIFI), University of Zaragoza Professor, Department of Theoretical Physics, Faculty of Sciences, University of Zaragoza Head of the Complex Systems and Networks Lab, COSNET, Institute BIFI, University of Zaragoza. Principal Scientist, Coordinator of the "Mathematics and Complex Systems Area" & Member of the Steering Committee, ISI Foundation, Turin, Italy. External Faculty, Complexity Science Hub Vienna, Austria.	March 2010 to present March 2003 to present October 2017 to present March 2017 to present
EDUCATION	University of Zaragoza, Zaragoza, Spain Ph.D. in Theoretical Physics, September 2000. • Thesis Title: <i>Some Stochastic Models of Fracture in Heterogeneous Systems</i> • Department of Theoretical Physics • Summa Cum Laude University of Havana, Havana, Cuba M.S. in Theoretical Physics, December 1996. • Thesis Title: <i>Criticality in Fragmentation Processes</i> • Department of Theoretical Physics • Summa Cum Laude B.S., Graduation (Laurea) in Physics, June 1993. • Faculty of Physics • Summa Cum Laude	
PROFESSIONAL EXPERIENCE	Director, Institute for Biocomputation and Physics of Complex Systems (BIFI), University of Zaragoza.	Feb 2019 -

	Deputy Scientific Director/Area (Mathematics and Complex Systems) Coordinator ISI Foundation, Turin, Italy	October 2017 -
	Deputy Director , Institute for Biocomputation and Physics of Complex Systems (BIFI). University of Zaragoza.	Feb 2015 to February 2019
	Elected President , Network Science Society.	June 2018 to present
	Elected President , Complex Systems Society.	Sept 2015 to Sept 2018
	Scientific Secretary , Institute for Biocomputation and Physics of Complex Systems (BIFI). University of Zaragoza.	Feb 2011 to February 2015
	Vice-President , Network Science Society.	June 2015 to June 2018
	Vice-president , Complex Systems Society.	Sept 2012 to Sept 2015
	Ramón y Cajal Senior Research Scientist , Institute for Biocomputation and Physics of Complex Systems (BIFI) & Department of Theoretical Physics. University of Zaragoza.	Feb 2005 to Feb 2010
	Research Scientist , Institute for Biocomputation and Physics of Complex Systems (BIFI) & Department of Theoretical Physics. University of Zaragoza.	Feb 2003 to Feb 2005
	Postdoctoral Fellow , The Abdus Salam International Centre for Theoretical Physics, Condensed Matter Group, Trieste, Italy	Sept 2000 to Jan 2003
	Associate Professor , Department of Physics, Technological University of Havana, Cuba.	Sept 1997 to Sept 2000
	Adjunct Assistant Professor & Associate Researcher , Centre of Renewable Energetic Technologies, Havana, Cuba.	Sept 1994 to Sept 1997
	Assistant Professor , Department of Physics, Technological University of Havana, Cuba.	Sept 1993 to Sept 1997
PROFESSIONAL SERVICES	President , Network Science Society.	June 2018 to present
	President , Complex Systems Society.	Sept 2015 to Sept 2018
	Advisory Board Member , Network Science Institute, Northeastern University, Boston, USA	Since 2017
	Divisional Associate Editor , Physical Review Letters	Since Sept 2014
	Member of the Future and Emerging Technologies (FET) Advisory Group to the European Commission H2020 Research Program.	Nov 2013- Dec 2017.
	Advisory Board Member WHO Collaborative Center "Complexity Sciences for Health Systems" (CS4HS). Division of Mathematical Modeling, University of British Columbia Centre for Disease Control, Vancouver, British Columbia, Canada	March 2013- March 2017.

Editor, PLoS Computational Biology	Since 2021
Editor, Journal of Complex Networks	Since 2014
Editor, New Journal of Physics	Since 2019
Editor, Chaos, Solitons and Fractals	Since 2018
Academic Editor, Scientific Reports	Since 2012
Academic Editor, PLoS ONE	Since 2010
Associate Editor, Applied Network Science	Since 2016
Associate Editor, Frontiers in Physics	Since 2018
Member of the Organizing Committee, Lake Como School on Complex Networks: Theory, Methods and Applications. First Edition held in May 2015. Currently in its 5th edition.	
	Since 2015
Reviewer, for more than 40 journals including: Nature, Science, Nature Physics, PNAS USA, PRL, Science Advances, Nature Communications, etc	
Reviewer, Spanish Ministry of Education and Science (Project proposals and under & post-graduate fellowships).	
Reviewer, French National Research Agency (ANR).	
Reviewer, European Commission, FP6, FP7 and H2020 Programs.	
Reviewer, The Netherlands Organization for Scientific Research (NWO).	
Panel Member for the selection of an IBS? (Institute for Basic Sciences) Institute Director. Seoul, Korea.	
Reviewer, Academy of Sciences of Finland.	

HONORS AND AWARDS

- ISI WoS Highly Cited Scientist (i.e, within the top 1% of most cited scientists) 2019.
- 2019 CSS Senior Scientific Award (this is the Complex Systems Society award to a scientific career).
- First-class ISI Fellow (Institute for Scientific Interchange, Turin, Italy), 2013.
- Member of the Spanish Royal Physics Society.
- Member of the European Physical Society.
- Member of the American Physical Society.
- Outstanding American Physical Society Reviewer (2009).
- Plenary Speaker for the prestigious Conference Cycles of Cosmo-Caixa. Barcelona, October 2009. Subject: Natural Selection and Evolution.
- Outstanding Europhysics Letters Reviewer (2008).
- Ramón y Cajal Fellow, 2005-2010.
- PhD Fellowship from the Spanish Ministry of Foreign Affairs, 1997-2000.
- 1997 Outstanding Teaching Award of the Minister for Education, Havana, Cuba.
- Our review article "Complex Networks: Structure and Dynamics", Physics Reports 424, 175-308 (2006) is the most cited Physics Reports paper of all time.
- Article "Evolutionary Game Dynamics in a Growing Structured Population", New Journal of Physics, 11, 083031 (2009), selected "Best of 2009" by IoP.
- Author of the most cited article of the University of Zaragoza, Zaragoza, Spain.

CONFERENCE ORGANIZATION AND PROGRAM COMMITTEES

- Steering Committee of Networks 2021: A Joint Sunbelt and NetSci Conference. Virtual, July 5-10, 2021.

- Chairman of the Steering Committee of the Complex Systems Society (the committee selects the venue and oversees the Conference on Complex Systems). Since Jan 2019.
- Co-Chair, International Workshop on Theoretical Perspectives in Network Science, Seoul, Korea. December 7-9, 2018.
- Program Committee Chair, International School and Conference on Network Science, Paris, France, Jun 11-15, 2018.
- Chairman, BIFI International Conference on Complexity, Networks and Collective Behavior, Zaragoza, Spain, Feb 6-8, 2018.
- Macfang "Mapping Complexity Foundations and Applications of Network Geometry", Barcelona, November 6 – 8, 2017
- Complex Networks 2017, 6th International Conference on Complex Networks and Their Applications, Lyon, France. Nov 29-Dec 1 (2017).
- CCS'17, Conference on Complex Systems 2017. Cancun, Mexico. Sept 17-22 (2017).
- Program Committee Member. SIAM Workshop on Network Science, Pennsylvania, USA. Jul 13-14 (2017).
- IC2S2 2017, 3rd International Conference on Computational Social Science, Cologne, Germany. Jul 10-13 (2017).
- NetSci 2017, International School and Conference on Network Science, Indianapolis, USA, Jun 19-23, 2017
- Program Committee Member. SIAM Workshop on Network Science, Pennsylvania, USA. Jul 13-14 (2017).
- Program Committee Member. COMPLEX NETWORKS 2016, 5th International Workshop on Complex Networks and their Applications, Milan, Italy. Nov 29-Dec 1st, 2016.
- Program Committee Member. Conference on Complex Systems, Amsterdam, The Netherlands (2016).
- Co-organizer of the 2016 CCS Satellite Meeting "Modeling of Disease Contagion Processes, 5th Edition" (together with V. Colizza and C. Poletto).
- Co-organizer of the 2015 CCS Satellite Meeting "Modeling of Disease Contagion Processes, 4th Edition" (together with V. Colizza).
- Chairman, International School and Conference on Network Science, NetSci 2015. Zaragoza, June 1-5, 2015.
- Member of the Program Committee. European Conference on Complex Systems, ECCS14. September 22-26. Lucca, Italy, 2014.
- Co-organizer of the 2014 ECCS Satellite Meeting "Modeling of Disease Contagion Processes, 3rd Edition" (together with V. Colizza, C. Poletto, and S. Meloni).
- Satellites Chair of the NetSci 2014 Conference, Berkeley, California, June 2-6, 2014.
- Co-organizer of the 2013 ECCS Satellite Meeting "Modeling of Disease Contagion Processes" (together with V. Colizza, C. Poletto, and S. Meloni).
- Co-organizer of the 2013 NetSci Satellite Meeting "Dynamic Networks: Theory and Applications in Information and Communication Networks" (together with F. Schweitzer and Maarten van Steen).
- Member of the Program Committee of the ECCS '12 Satellite Meeting: Data-Driven Modeling of Contagion Processes - Brussels, September 5th, 2012.
- Member of the Program Committee of the WWW2012 Conference. Lyon, France. April 2012.
- Member of the Scientific Committee of the Conference NET-WORKS11, El Escorial, Madrid, Spain. 2011.
- Chairman of the International Conference: "BIFI 2010: IV International Congress: Networks, A Framework for Cross-Disciplinary Applications", Zaragoza, Spain, 2010.
- Member of the Scientific & Organizing Committees of the Conference NET-WORKS10, University of Zaragoza. Spain. 2010.
- Member of the Program Committee of the "IEEE International Workshop COMPENG 2010 - Complexity in Engineering", Rome, Italy (Feb 22-24, 2010).
- Member of the Organizing Committee of the IV National BIFI Conference, University of

Zaragoza. Spain. 2009.

- Member of the Scientific Committee of the BCNet Workshop 2008, Barcelona, Spain, December 2008.
- Member of the Scientific Committee of the Conference NET-WORKS08, University of Navarra, Spain. 2008.
- Member of the Technical Program Committee of the International Conference "BIONET-ICS 2007: 2nd International Conference on Bio-Inspired Models of Network, Information, and Computing Systems", Budapest, Hungary (10-13 Dec 2007).
- Member of the Scientific Committee of the Conference NET-WORKS07, University of Rey Juan Carlos, Aranjuez, Spain. 2007.
- Member of the Organizing Committee of the III National BIFI Conference, University of Zaragoza. Spain. 2007.
- Chairman of the International Conference: "BIFI 2006 II International Congress: From Physics to Biology: The Interface between Experiment and Computation", Zaragoza, Spain.
- Member of the Organizing Committee of the Neuroscience Meeting Series (once a year, local meetings to promote the exchange of knowledge among researchers of different fields within the subject of Neuroscience, University of Zaragoza, Spain).

MAJOR KEYNOTE,
INVITED AND
CONTRIBUTED
TALKS

- Keynote Speaker, "Data-driven Modeling of COVID-19", IC2S2 (International Conference on Computational Social Science), Boston, USA (online conference). July 17-20, 2020.
- Contributed Talk, "Biodiversity and Structural Stability of Multilayer Ecological Networks", NetSci-X 2020, Tokyo, Japan. Jan 20-23, 2020.
- Plenary Speaker, "Synchronization of Phase Oscillators in Complex Networked Systems", DINCON2019 (Brazilian Conference on Dynamical Systems, Control and Applications), USP Sao Carlos, Brazil. Nov 25-27, 2019.
- Plenary Speaker, "From Scaling and Criticality to Complexity and Networks; and Back", talk and acceptance speech of the 2019 CSS Senior Scientific Award, 2019 Conference on Complex Systems, Nanyang Technological University, Singapore. Sep 30-Oct 4, 2019.
- Invited Speaker, "Disease spreading processes through the lens of multilayer networks", Threshold Networks' Workshop, University of Nottingham, UK. July 22-24, 2019.
- Plenary Speaker, "On the emergence of synchronization of coupled oscillators in complex networks". Satellite "Information, Self-Organizing Dynamics, and Synchronization on Networks (ISODS)", NetSci 2019, Burlington, Vermont, May 27-31, 2019.
- Invited Speaker, "Spreading Dynamics on Directed Multilayer Networks", DANCE (Data Analytics for Climate and Earth: Causality, patterns and prediction) Workshop, University of California Irvine, Irvine, USA. March 27-29, 2019.
- Keynote Speaker, "Diffusion Dynamics on Directed Multilayer Networks", International Workshop on Theoretical Perspectives in Network Science, Seoul, Korea. December 7-9, 2018.
- Invited Speaker, "Emergence of Consensus and Topical Alignment in Online Social Systems", Conference on Complex Systems CCS2018 Satellite "Understanding Opinion and Language Dynamics using massive data", Thessaloniki, Greece. September 24-28, 2018.
- Invited Speaker, "The Nested Structural Organization of the Worldwide Trade Multilayer Network", Conference on Complex Systems CCS2018 Satellite "Economic Fitness and Complexity", Thessaloniki, Greece. September 24-28, 2018.
- Invited Speaker, "Diffusion Processes on Multilayer Networks", NetSci 2018 Satellite "Networks of Networks: Systemic Risk and Infrastructural Interdependencies", Paris, France. June 11-15, 2018.
- Invited Speaker, "The Epidemiology of Tuberculosis: Challenges and Opportunities", NetSci 2018 Satellite "Networks in disease ecology: modeling interacting pathogens, multiple host layers, and evolution", Paris, France. June 11-15, 2018.
- Invited Speaker, "Multilayer Systems: From Diffusion Processes to Transportation Networks", Workshop "Transversal problems on Complexity", Cergy, France. May 23-24,

2018.

- Invited Speaker, "Synchronization Transitions in Complex Networks", AMCOS'18 (Analysis and Modeling of Complex Oscillatory Systems), Barcelona, Spain. March 19-23, 2018.
- Invited Speaker, "From Small to Big Data: The Physics of Human Behavior", Workshop "Social Informatics: en route towards Asimov's Psychohistory?", Complexity Science Hub Vienna, Vienna, Austria. January 21- February 2nd, 2018.
- Keynote Speaker, "Disease Spreading Processes in Multilayer Networks", BeNet-2017 Belgian Networks Research Meeting Ghent, Belgium. December 6, 2017.
- Invited Speaker, "Disease Spreading in Multilayer Networks", Symposium of the Japan Society of Mathematical Biology, Hokkaido, Japan. October 6-8, 2017.
- Invited Speaker, "Cooperation among Humans: Results from the Lab", Satellite "Evolutionary Game Dynamics" at the 1st Latin American Conference on Complex Networks, Puebla, Mexico. September 25-29, 2017.
- Plenary Speaker, "Recent insights into the Structure and Dynamics of Mutualistic Ecosystems", 1st Latin American Conference on Complex Networks, Puebla, Mexico. September 25-29, 2017.
- Opening Talk, "Current Challenges in Computational Social Sciences", Conference on Complex Systems CCS2017 Satellite "Computational Social Science and Complexity: From Socio-Physics to Data-Driven Research", Cancun, Mexico. September 17-22, 2017.
- Invited Speaker, "Promoters of Human Cooperation", IBSEN Workshop, Aalto University, Finland. September 5-7, 2017.
- Invited Speaker, "Disease spreading processes through the lens of multilayer networks", Workshop on Advances on Epidemics in Complex Networks. Delft University of Technology, The Netherlands. August 31-September 1, 2017.
- Invited Speaker, "A data-driven model for the assessment of age-dependent patterns of Tuberculosis burden and impact evaluation of novel vaccines", Satellite "Contagion on Networks 2017" at the International School and Conference on Network Science, Indianapolis, USA, Jun 19-23, 2017.
- Invited Speaker, DOOCN Satellite at NetSci'17, "Multilayer systems: from diffusion processes to transportation networks". International School and Conference on Network Science, Indianapolis, USA, Jun 19-23, 2017.
- Invited Speaker, "Multilayer Networks in Biology: from the cellular to the population level", Satellite "Network Medicine: Quantitative interactome and multilayer networks taking medicine beyond the genome" at the International School and Conference on Network Science, Indianapolis, USA, Jun 19-23, 2017.
- Speaker, International School and Conference on Network Science, Indianapolis, USA, Jun 19-23, 2017.
- Keynote Speaker, Complex Networks 2016, 5th International Workshop on Complex Networks and their Applications, Milan, Italy. Nov 29-Dec 1st, 2016.
- Keynote Speaker, "Delving into behavioral responses when humans face social dilemmas". CCS16 Satellite "Evolutionary Game Theory: From Biology to Social Systems". Amsterdam, Netherland. 19-22 September 2016.
- Invited Speaker, "Contagion Processes in Multilayer Networks", Complex Networks: from theory to interdisciplinary applications (a Satellite Meeting to Statphys26), July 11-13, 2016. Marseille, France.
- Keynote Speaker, "Influence of network structure in mutualistic ecosystems", Summer Solstice 2016, 8th International Conference on Discrete Models of Complex Systems, June 20-22, 2016. Aveiro, Portugal.
- Invited Speaker, "Dynamics of Interacting Diseases", Workshop on Multilayer and Interconnected Networks: Epidemic Processes and Robustness, June 8, 2016. Girona, Spain.
- Invited Speaker, "Visions for Complexity" Kick-off Meeting of the Complexity Science Hub Vienna, May 23, 2016. Vienna, Austria.
- Invited Speaker, "Use and Misuse of Networks in Biology", Symposium on Biological Information Processing, Max Planck Institute for Biological Cybernetics, April 26-29, 2016.

- Tubingen, Germany.
- Invited Lecturer, "Contagion Processes in Complex Multilevel Networks", ICMS/KNAW Complexity Science Winter School, December 14-18, 2015. TU Eindhoven, Netherland.
 - Invited Speaker, "From small to big data: The physics of human behavior", IASA Systems Analysis 2015, November 11-13, 2015. Vienna, Austria.
 - Keynote Speaker, "Dynamics of Interacting Diseases", FISES'15 Conference, October 5-7, 2015. Badajoz, Spain.
 - Keynote Speaker, "Synchronization Processes on Complex Networks", Fourth Workshop on Nonlinear Dynamics and Synchronization (INDS'15), July 30-31, 2015. Klagenfurt, Austria.
 - Invited Talk, "Contagion processes on multilayer systems", Workshop Mathematics and Physics of Multilayer Complex Networks, July 6-8, 2015. MPI for the Physics of Complex Systems, Dresden, Germany.
 - Keynote Speaker, "From small to Big Data", International Conference on Socio-cybernetics, June 29-30, 2015. Zaragoza, Spain.
 - Invited Talk, "The Physics of Human Behavior". 25th Granada Seminar, June 15-19, 2015. Granada, Spain.
 - Invited Talk, "Dynamics of Interacting Diseases". ECCS'14 Satellite Multiplex Networks 2014: Towards the understanding of a complex world. Lucca, Italy, September 23, 2014.
 - Invited Talk, "Forecasting Large-scale Social Phenomena". ECCS'14 Satellite Dynamics on and of Complex Networks. Lucca, Italy, September 24, 2014.
 - Invited Talk, "Recent experiments on Humans playing a Prisoner's Dilemma: age and reputation effects" Workshop on Spatial Human Cooperation: from Theory to Experiments and back, MPI for Evolutionary Biology, Plön, Germany, May 2014.
 - Contributed Talk, "Dynamic Systems: From Statistical Mechanics to Engineering Applications". Zurich, Switzerland, January 2014.
 - Plenary Invited Speaker at the European Conference on Complex Systems (ECCS 2013), Barcelona, Spain. September 2013.
 - Invited Speaker at ECCS 2013 Satellite "Collective Contagion", Barcelona, Spain. September 2013.
 - Invited Speaker at ECCS 2013 Satellite "Global Computing for our Complex Hyper-connected World", Barcelona, Spain. September 2013.
 - Invited Speaker at the Second Symposium of the Institute for Basic Science "Towards a Theoretical Description of Nonlinear Dynamics in Complex Systems", Seoul, Korea. August 2013.
 - Contributed talk at the "Workshop on Time-dependent and Multiplex Networks", University of Oxford, Oxford, UK. July 2013.
 - ISI Fellows award from the ISI Foundation, Turin, Italy. The ceremony took place on June 27th, 2013, followed by the conference "The Being of Science" in which all ISI Fellows shared their vision with the public and gave an invited talk.
 - Invited Lecturer (course "Networks: Structure and Diffusion Dynamics") at the Summer School "Emergent Dynamics of Discrete & Stochastic Multiscale Systems: analysis & simulation", TU Eindhoven, The Netherlands. June 2013.
 - Invited Speaker at the Workshop "Uncertainty in Interactions Networks", Bath University, UK. June 2013.
 - Invited Speaker at the Final Conference of Cyberemotions, Warsaw, Poland. January 2013.
 - Invited Lecturer at the School "Complex Networks in Action", University of Catania, Catania, Italy. September 2012.
 - Invited participant to the Workshop "Complex Systems Analysis: Advancing Health Systems Policy Design and Planning". Bellagio, Italy, September 2012.
 - Invited Speaker at the National Conference "Nolineal 2012". University of Zaragoza, Zaragoza, Spain. June 2012.
 - Keynote Speaker at "XXXIII Annual Meeting of the Neurology Society of the Basque Country", Villabuena de álava, Spain. March 2012.

- Invited Speaker at the "V BIFI International Conference: Protein Targets, Discovery of Bioactive Compounds", Zaragoza, Spain. February 2012.
- Keynote Speaker at "Third Course on Network Science", organized by the Orange Chair at UPM, Madrid, Spain. 2011.
- Invited Speaker at "An Evolutionary Journey II", Universidad Carlos III, Madrid. 2011.
- Keynote Speaker at Workshop "Sinergia", organized by Arts Santa Monica, Barcelona, Spain. 2011.
- Keynote Speaker at Workshop "Robustness of Complex Networks", Delft, The Netherlands. 2010.
- Invited Talk, STATPHYS 2010 Satellite Meeting: New Frontiers in Complex Networks. Seoul, Korea. 2010.
- Invited Talk, Complex Energy Landscapes: Computational and Statistical Methods for Soft Matter. ZCAM, Zaragoza, Spain. 2010.
- Contributed Talk, Statistical Physics and Game Theory. Aland, Finlandia. 2009.
- Invited Talk, Complejidad: Nuevos retos en la Ciencia y la Tecnologia. Universidad Rey Juan Carlos, Spain. 2009.
- Invited Talk, International Workshop "Evolution and Co-evolution". Universidad Carlos III, Madrid, Spain. 2009.
- Contributed Talk, NET-WORKS 08. Universidad de Navarra, Pamplona. 2008.
- Plenary Speaker, Non-Lineal 2008. Universidad Politécnica de Cataluña, Barcelona. 2008.
- Contributed Talk, Statistical Physics FISES 08. Universidad de Salamanca, Spain. 2008.
- Invited Talk, Bio-inspired Complex Networks in Science and Technology: From Topology to Structure and Dynamics. Max Planck Institute, Dresden, Germany. 2008.
- 2 Invited Talks, CNET-07 Workshop on Complex Networks. University of Aveiro, Aveiro, Portugal. 2007.
- Plenary Speaker, NET-WORKS-07. Universidad Rey Juan Carlos, Aranjuez, Spain. 2007.
- Contributed Talk, Non-Lineal 2007. Universidad de Castilla la Mancha, Ciudad Real. 2007.
- Invited Talk, BIOWIRE-07: Workshop on Bio-inspired design of Networks. Computer Lab, Cambridge University, UK. 2007.
- Invited Talk, Dynamics on Complex Networks and Applications. Max Planck Institute, Dresden, Germany. 2006.
- Invited Talk, Workshop on Networks and Dynamical Processes: Epidemics, Social Contacts and Percolation. University of Bath, U.K. 2005.
- Plenary Speaker, XIX Congress of Differential Equations y Applications & IX Congress of Spanish Society of Applied Mathematics. Universidad Carlos III, Madrid. 2005.
- Invited Talk, FISES-05. Madrid, Spain. 2005.
- Invited Talk, Workshop on the Structure and Function of Complex Networks. International Centre for Theoretical Physics (ICTP), Trieste, Italy. 2005.
- Contributed Talk, Workshop on Synchronization of Complex Networks. University of Barcelona, Barcelona, Spain. 2004.
- Invited Talk, DIMACS Working Group Meeting on Analogies between Computer Viruses and Immune Systems and Biological Viruses and Immune Systems. Rutgers University, NJ, USA. 2002.

MOST RELEVANT INVITED SEMINARS

- Data-driven modeling to control the COVID19 pandemic. Virtual Invited Seminar at the Spanish Royal Academy of Engineering (in Spanish). July 15, 2021.
- Data-driven modeling of COVID19 pandemic. Virtual Seminars on Complexity, Center for Complexity and Biosystems, University of Milan, Italy. September 8th, 2020.
- Epidemias Globales: Pasado, Presente y Futuro. Online Webinar delivered for Centro de Ciencias de la Complejidad, Mexico City, Mexico. May 2020.
- Global diseases: the case of COVID-19. Webinar delivered for Kampal Data Solutions S.L. April 15th 2020, Zaragoza, Spain.
- Complexity, the Science of the 21st Century, Institute of Mathematics and Computer Sci-

- ence, University of Sao Paulo (USP) at Sao Carlos, Sao Carlos, Brazil. November, 2019.
- Predicting Global Pandemics, Southern University of Science and Technology, Shenzhen, China. July, 2019.
 - Disease spreading processes in complex networked systems, Harbin Institute of Technology, Shenzhen, China. June, 2019.
 - Synchronization dynamics on networks", Harbin Institute of Technology, Shenzhen, China. June, 2019.
 - Global Epidemic Outbreaks: a threat to humankind. Public Lecture given (in Spanish) at the Ibercaja Foundation invited by the Academy of Sciences of Aragon. Zaragoza, Spain. March 21, 2019.
 - Structure and Dynamics of Multilayer Networks. Seminar given at the Department of Physics, Seoul National University, Seoul, Korea. December 11, 2018.
 - Promoters of Human Cooperation: Theory vs Experiments. Seminar given at the Polytechnic University of Milan, Milan, Italy. July 10th, 2018.
 - Complexity, Networks and Systems Thinking. Invited Lecture given at the European Defense Agency, Brussels, Belgium. June 5th, 2018.
 - Multilayer networked systems: from diffusion processes to transportation networks. Seminar given at Network Science Institute, Northeastern University, Boston. June 16, 2017.
 - Promoters of Human Cooperation: results from the Lab. Seminar given at Network Science Institute, Northeastern University, Boston. June 14, 2017.
 - Multilayer systems: from diffusion processes to transportation networks. Seminar given at Qatar Computing Research Institute, Doha, Qatar. May 2017.
 - The Physics of Human Behavior. Seminar given at the Faculty of Economics, University of Zaragoza, Zaragoza. April 15, 2016.
 - Multilayer Networks. 2-hour Lesson taught to Master students at Network Science Institute, Northeastern University, Boston. November 20, 2015.
 - Current topics in Complex Network Research. Informal Seminar and Discussions at Gene Stanley's Group, Boston University, November 20, 2015.
 - Use and Misuse of Networks in Biology, Seminar given at Sharma Lab, Channing Division of Network Medicine, Harvard Medical School, Harvard University, Boston. November 19, 2015.
 - Delving into Behavioral Responses when Humans face Social Dilemmas. Visiting Speaker at Network Science Institute, Northeastern University, Boston. November 18, 2015.
 - Contagion Dynamics in Complex Networked Systems. Applied Math Seminar gave at the University of Southampton, United Kingdom, March 18, 2014.
 - Diffusion processes on complex networked systems. Invited seminar given at the Department of Mathematics, Queen Mary University, London, UK. July 2013.
 - Online Networks and the Diffusion of Protests. Invited seminar given at ETH Zurich, Switzerland (December 2012).
 - Techno-social networks and the diffusion of collective social phenomena. Talk addressed at the "Scuola Lagrange Sistemi Complessi", ISI Foundation, Turin, Italy (July 2012).
 - Online Networks and the Diffusion of Protests. Dep. of Biomedical Engineering and Computational Science (BECS), Aalto University, Espoo, Finland (April 2012).
 - The 15-M Movement and the Social Media. Talk addressed to a general public at Ibercaja Zentrum, Zaragoza, 2011.
 - The Dynamics of Protest Recruitment through an Online Network. Talk addressed to a general public at Cosmo-Caixa Madrid, 2011.
 - Transcriptional regulatory network and epidemiology of Tuberculosis. School of Informatics, Indiana University, Bloomington, USA (November 2010).
 - Complex Networks: From the Biomolecular to the Social, Faculty of Medicine, University of Zaragoza, Spain (April 2010).
 - The Evolution of Evolutionary Theory, Invited Conference on Natural Selection, Cosmo-Caixa, Barcelona, Spain (October 2009).
 - Evolutionary Dynamics on Graphs. ETH Zurich, Switzerland. (November, 2008).

- Evolutionary Game Dynamics on Networks. ISI Foundation, Turin, Italy. (August, 2008).
- Complex Networks: The Case of Epidemic Spreading. Department of Mathematics, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain. (October, 2007).
- Paths to Synchronization in Complex Networks. Department of Mathematics, Bath Institute for Complexity, University of Bath, U.K. (September, 2006).
- Paths to Synchronization in Complex Networks. Complexity Research Group, BT Exact, British Telecom Laboratories, Ipswich, U.K. (August, 2006).
- The Structure of P2P Networks. Universidad Rovira i Virgili, Tarragona, Spain. (March, 2006).
- Complex Networks in Biology. Institute for Biocomputation and Physics of Complex Systems (BIFI), (April, 2005).
- Traffic Handling and Covering Problems in Communication Networks. Complexity Research Group, BT Exact, British Telecom Central Laboratories, Martlesham, Suffolk, U.K. (March, 2005).
- Dynamics of Complex Gene Expression Networks. University of Rome "La Sapienza", Rome, Italy. (February, 2004).
- Synchronization of Coupled Oscillators in Complex Networks. Donostia International Physics Center, Universidad del Pais Vasco, San Sebastián, Spain. (January, 2004).
- Complex Networks in Nature: Structure and Applications. Donostia International Physics Center, Universidad del Pais Vasco, San Sebastian, Spain. (January, 2004).
- The Use of Rumor Spreading Algorithms for Fast and Efficiency Communication in Complex Technological Networks. Complexity Research Group, BT Exact, British Telecom Central Laboratories, Martlesham, Suffolk, U.K. (August, 2003).
- Transport Process in Complex Networks. Department of Condensed Matter, Faculty of Sciences, University of Zaragoza, Spain (February, 2003).
- Resilience of Graphs with Arbitrary Degree Correlations. The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (December, 2002).

FUNDING

- "*Complexity Science for Sustainable and Healthy Nutrition*". ISI Foundation's Industrial Project (funder confidential) 2021-2022. co-PI. €441,900.
- "*Knowledge At the Tip of Your fingers: Clinical Knowledge for Humanity (KATY)*". European Union. H2020-SC1-FA-DTS-2018-2020 Project. 2021-2025. PI. €8,479,900 (including €200,000 to the University of Zaragoza).
- "*Data-driven computational platform for scenario evaluation and mitigation of COVID-19 pandemic in Spain*". Government of Aragon, Spain. 2020-2021. PI. €72,000.
- "*Computational infrastructure for COVID-19 scenario evaluations*". Santander Bank, Spain. 2020. PI. €7000.
- "*AccelNet: Accelerating Discovery in Multilevel Network Science*". Collaborative Project. National Science Foundation, USA. Project coordinated by Indiana University Bloomington (PI Santo Fortunato) and Northeastern University Boston (PI Alessandro Vespignani). Role: PI of one (ISI Foundation) of the 4 European Institutions participating. USD 1,100,000.
- "*Bio-computational approaches applied to the development of TB vaccines: epidemiological modeling, efficacy simulations and immunogenetics analyses*". Government of Aragon, Spain. Grant LMP117-18. 2019-2020. PI. €84,650.
- "*Tackling Complexity in Socio-technical, Biological and Natural Systems (TAPLEX)*". Ministry of Economy and Competitiveness (MINECO), Spain. Grant FIS2017-87519-P. 2018-2020. PI. €169,400.
- "*Bridging the Gap: from Individual Behavior to the Socio-technical Man (IBSEN)*". European Union. FET Project. 2015-2018. PI. €2,663,238 (including €350,000 to the University of Zaragoza).
- "*Distributed Global Financial Systems for Society (DOLFINS)*". European Union. Project under the call FET Proactive Global Systems Science. 2015-2017. PI. €3,650,000 (including €250,000 to the University of Zaragoza).

- "*Nonlinear and Statistical Physics Applied to Social, Biological and Technological Systems*". Ministry of Economy and Competitiveness (MINECO), Spain. 2015-2017. Co-PI. €185,000 .
- "*Mathematical framework for multiplex networks (PLEXMATH)*". European Union. Project 317614 under call FP7-ICT-2011-8. 2012-2015. PI. €1,520,540 (including €350,000 to the University of Zaragoza).
- "*Foundational Research on multilevel complex networks and systems (MULTIPLEX)*". European Union. Project 317532 under call FP7-ICT-2011-8. 2012-2016. PI. €5,100,000 (including €325,000 to the University of Zaragoza).
- "*A Model for the Identification of Unique Clients and Influential Users of Mobile Phones*". Project Granted by Applied Advanced Analytics. 2011. PI. 20.400 €.
- "*Urban Mobility at Zaragoza*". Institute BIFI. PI. 6.400 €.
- "*Networks, Biophysics and Nonlinear Science*". Ministry of Science and Innovation. (MICINN) Project Number: FIS2011-25167. 2012-2014. Co-PI. 259.000 €.
- "*Structure and Dynamics of Natural and Manmade Complex Systems*". Government of Aragon, DGA. Project number FMI22/10. 2011. PI. 9.300 €.
- "*Thematic Network: Dynamics and Synchronization in Networks*". Ministry of Science and Innovation. (MICINN) Project Number: FIS2010-09832-E. 2010-2011. PI of Zaragoza node. 12.000 €.
- "*Tackling Complexity in Physical and Biological Systems: A Computational Approach*". Ministry of Science and Innovation. (MICINN) Project Number: FIS2009-13364-C02-01/FIS. 2010-2012. Co-PI. 86.000 €.
- "*Networks: A Framework for Cross-Disciplinary Applications*". Ministry of Science and Innovation, DGA and University of Zaragoza. 2010. PI. 9.500 €.
- *COST action "Physics of Conflict and Cooperation"*. European Union. 2009-2011. Co-PI (representative of Zaragoza Group).
- "*Systems Biology of Mycobacterium tuberculosis PhoP: Signaling, Cellular Cycle and Epidemiological Interactions*". DGA, Project Number: PI038/08. 2008-2010. PI. 40.000 €.
- "*Dynamics and Structure of Complex Systems*". Ministry of Science and Innovation. (MICINN) Project Number: FIS2008-01240/FIS. 2009-2011. Co-PI. 210.000 €.
- *Thematic Network: "Dynamics and Collective Phenomena in Socio-Economic Systems"*. Ministry of Science and Innovation. (MICINN) Project Number: FIS2008-01155-E/FIS. 2008-2009. Co-PI. 12.000 €.
- *Grant to the Consolidated Group FENOL*. Government of Aragon, (DGA). 2008-2009. Co-PI. 19.000 €.
- "*Complexity in Biological and Social Systems*". DGICYT FIS2006-12781-C02-01. 2007-2009. Co-PI. 45000 €.
- "*Global Approach to Brain Activity (GABA)*". European Union, NEST Pathfinder Call. 2007-2009. PI (subcontracted node). 20.000 €.
- "*Modeling Wireless Communication Networks*". DGA (MI06/2005). 2006. PI. 9.200 €.
- *Thematic Network: "Applications of Statistical and Non-Linear Physics to Economy and Social Sciences"*. Ministry of Education and Science. (MEC). 2005-2007. Co-PI. 12.000 €.
- "*Theory and Simulation of Complex Systems 2*". Ministry of Education and Science. MEC FIS2005-00337. 2006-2008. Co-PI. 83.000 €.
- *Grant to the Consolidated Group FENOL*. Government of Aragon, (DGA). 2005-2007. Co-PI. 18.000 €.
- "*Complex Networks and their Applications in Physics, Biology and Information Technologies*". Ramón y Cajal Grant, Ministry of Education and Science. Project Number: RyC-2004-001210. PI. 8.000 €.
- "*Emergent and Cooperative Phenomena in Complex Systems between Physics and Biology*". DGICYT FIS2004-05073-C04-01. 2005-2006. Co-PI. 40.000 €.
- "*Physical Models of Many Body Systems: Applications in Geophysics*". DGICYT Grant (Project Number. BFM 2002-01798). 2003-2005. Co-PI. 36.000 €.

PUBLICATIONS My scientific production amounts to 250+ peer-reviewed publications with a total of 22250+ citations and h -index=59 (ISI WoK, as of June 2021); and 37283+ and 71 (Google Scholar, as of June 2021). Relevant contributions include journals like **Physics Reports**, **Nature Physics**, **Nature Communications**, **Nature Human Behaviour**, **Proc. Nat. Acad. Sci. USA**, **Phys. Rev. Lett.**, **Phys. Rev. X**, **Science Advances**, etc. Citation record can be found [here](#) or [here](#).

**REFEREED
JOURNAL
PUBLICATIONS**

258. Dan Lu, Alberto Aleta, Marco Ajelli, Romualdo Pastor-Satorras, Alessandro Vespignani, Yamir Moreno, “Data-driven estimate of SARS-CoV-2 herd immunity threshold in populations with individual contact pattern variations”, submitted for publication.
257. Luiz G. A. Alves, Giuseppe Mangioni, Francisco A. Rodrigues, Pietro Panzarasa, and Yamir Moreno, “The rise and fall of countries in the global value chains”, submitted for publication.
256. Paulo Cesar Ventura, Alberto Aleta, Francisco Aparecido Rodrigues, Yamir Moreno, “Modeling the effects of social distancing on the large-scale spreading of diseases”, submitted for publication.
255. Alain Barrat, Guilherme Ferraz de Arruda, Iacopo Iacopini, Yamir Moreno, “Social contagion on higher-order structures”, submitted for publication.
254. Unai Alvarez-Rodriguez, Federico Battiston, Guilherme Ferraz de Arruda, Yamir Moreno, Matjaz Perc, Vito Latora, “Collective games on hypergraphs”, submitted for publication.
253. Alberto Aleta, David Martin-Corral, Michiel A. Bakker, Ana Pastore y Piontti, Marco Ajelli, Maria Litvinova, Matteo Chinazzi, Natalie E. Dean, M. Elizabeth Halloran, Ira M. Longini, Jr., Alex Pentland, Alessandro Vespignani, Yamir Moreno, and Esteban Moro, “Quantifying the importance and location of SARS-CoV-2 transmission events in large metropolitan areas”, submitted for publication (2021).
252. Alberto Aleta and Yamir Moreno, “Age differential analysis of COVID-19 second wave in Europe reveals highest incidence among young adults”, submitted for publication (2021).
251. Michele Starnini, Alberto Aleta, Michele Tizzoni, Yamir Moreno, “Impact of the accuracy of case-based surveillance data on the estimation of time-varying reproduction numbers”, submitted for publication (2020).
250. C. T. Martinez-Martinez, J. A. Méndez-Bermúdez, T. Peron, Y. Moreno, “Statistical properties of mutualistic-competitive random networks”, submitted for publication (2021).
249. Guilherme Ferraz de Arruda, Lucas G. S. Jeub, Angélica S. Mata, Francisco A. Rodrigues, Yamir Moreno, “From subcritical behavior to elusive transitions in rumor models”, submitted for publication (2021).
248. Xiangrong Wang, Thomas Peron, Johan L. A. Dubbeldam, Sonia Kèfi, Yamir Moreno, “Interspecific competition shapes the structural stability of mutualistic networks”, submitted for publication (2021).
247. Henrique F. de Arruda, Felipe M. Cardoso, Guilherme F. de Arruda, Alexis R. Hernández, Luciano da F. Costa, Yamir Moreno, “Modeling how social network algorithms can influence opinion polarization”, submitted for publication (2021).
246. Jiarong Xie, Xiangrong Wang, Ling Feng, Jin-Hua Zhao, Yamir Moreno, Yanqing Hu, “Induced Percolation on Networked Systems”, submitted for publication (2021).

245. Jocelyn Raude, Marion Debin, Cecile Souty, Caroline Guerrisi, Clement Turbelin, Alessandra Falchi, Isabelle Bonmarin, Daniela Paolotti, Chinelo Obi, Jim Duggan, Yamir Moreno, Ania Wisniak, Antoine Flahault, Thierry Blanchon, and Vittoria Colizza, "Are people excessively pessimistic about the risk of coronavirus infection?", submitted for publication.
244. Francisco A. Rodrigues, Thomas Peron, Colm Connaughton, Jurgen Kurths, and Yamir Moreno, "A machine learning approach to predicting dynamical observables from network structure", submitted for publication.
243. P. Piedrahita, J. J. Mazo, L. M. Floria, and Y. Moreno, "Pulse-coupled model of excitable elements on heterogeneous sparse networks", submitted for publication.
242. L.-L. Jiang, Z. Wang, C.-S. Zhou, J. Kurths, and Y. Moreno, "Assessing the impact of costly punishment and group size in collective-risk climate dilemmas", submitted for publication.
241. H. Guo, D. Jia, I. Sendiña-Nadal, M. Zhang, Z. Wang, X. Li, K. Alfaro-Bittner, Y. Moreno, and S. Boccaletti, "Evolutionary games on simplicial complexes", **Chaos Solitons and Fractals**, in press (2021).
240. Carlos Gracia-Lázaro, Edgardo Brigatti, Alexis R. Hernández, Yamir Moreno, "Polarization inhibits the phase transition of Axelrod's model", **Physical Review E**, in press (2021).
239. F. Maciel Cardoso, S. Meloni, C. Gracia-Lázaro, A. Antonioni, J. A. Cuesta, A. Sánchez, and Y. Moreno, "Framing in multiple public goods games and donation to charities", **Royal Society Open Science** 8:202117 (2021).
238. Marta Tuninetti, Alberto Aleta, Daniela Paolotti, Yamir Moreno, and Michele Starnini, "Prediction of new scientific collaborations through multiplex networks", **EPJ Data Science** 10:25 (2021).
237. Guilherme Ferraz de Arruda, Michele Tizzani, and Yamir Moreno, "Phase transitions and stability of dynamical processes on hypergraphs", **Communications Physics** 4:24 (2021).
236. Xiangrong Wang, Alejandro Tejedor, Yi Wang, and Yamir Moreno, "Unique superdiffusion induced by directionality in multiplex networks", **New Journal of Physics** 23, 013016 (2021).
235. Unai Alvarez-Rodriguez, Federico Battiston, Guilherme Ferraz de Arruda, Yamir Moreno, Matjaz Perc, and Vito Latora, "Evolutionary dynamics of higher-order interactions in social networks", **Nature Human Behaviour** 5, 586-595 (2021).
234. Paulo Cesar Ventura da Silva, Yamir Moreno, and Francisco A. Rodrigues, "Role of time scale in the spreading of asymmetrically interacting diseases", **Physical Review Research** 3, 013146 (2021).
233. Felipe M. Cardoso, Carlos Gracia-Lázaro, and Yamir Moreno, "Dynamics of heuristics selection for cooperative behavior", **New Journal of Physics** 22, 123037 (2020).
232. Alberto Aleta, Marta Tuninetti, Daniela Paolotti, Yamir Moreno, Michele Starnini, "Link prediction in multiplex networks via triadic closure", **Physical Review Research** 2, 042029(R) (2020).
231. Guilherme Ferraz de Arruda, J. A. Méndez-Bermúdez, Francisco A. Rodrigues, Yamir Moreno, "Universality of eigenvector delocalization and the nature of the SIS phase transition in multiplex networks", **Journal of Statistical Mechanics: Theory and Experiment**, 103405 (2020).

230. Claudia Payrato-Borras, Laura Hernandez, and Yamir Moreno, "Measuring Nestedness: A comparative study of the performance of different metrics", **Ecology and Evolution** 10:11906–11921 (2020).
229. Fátima Velásquez-Rojas, Paulo Cesar Ventura da Silva, Colm Connaughton, Yamir Moreno, Francisco A. Rodrigues, Federico Vazquez, "Disease and information spreading at different speeds in multiplex networks", **Physical Review E** 102, 022312 (2020).
228. Alberto Aleta, David Martin-Corral, Ana Pastore y Piontti, Marco Ajelli, Maria Litvinova, Matteo Chinazzi, Natalie E. Dean, M. Elizabeth Halloran, Ira M. Longini Jr., Stefano Merler, Alex Pentland, Alessandro Vespignani, Esteban Moro, and Yamir Moreno, "Modeling the impact of testing, contact tracing and household quarantine on second waves of COVID-19", **Nature Human Behaviour** 4, 964–971 (2020).
227. Alberto Aleta, Guilherme Ferraz de Arruda, and Yamir Moreno, "Data-driven contact structures: from homogeneous mixing to multilayer networks", **PLoS Computational Biology** 16(7):e1008035 (2020).
226. Marko Jusup, Felipe Maciel Cardoso, Carlos Gracia Lazaro, Liu Chen, Zhen Wang, and Yamir Moreno, "Robust behavioral patterns behind the demise of the commons", **Royal Society Open Science** 7:201026 (2020).
225. Jiachen Ye, Peng Ji, David Waxman, Wei Lin, Yamir Moreno, "Impact of intra and inter-cluster coupling balance on the performance of nonlinear networked systems", **Chaos, Solitons and Fractals** 139:110065 (2020).
224. Joseph D. O'Brien, Alberto Aleta, Yamir Moreno, and James P. Gleeson, "Quantifying Uncertainty in a Predictive Model for Popularity Dynamics", **Physical Review E** 101, 062311 (2020).
223. Felipe M. Cardoso, Carlos Gracia-Lázaro, Frederic Moisan, Sanjeev Goyal, Angel Sanchez, and Yamir Moreno, "Effect of network topology and node centrality on trading", **Scientific Reports** 10:11113 (2020).
222. Alberto Aleta, Qitong Hu, Jiachen Ye, Peng Ji, and Yamir Moreno, "A data-driven assessment of early travel restrictions related to the spreading of the novel COVID-19 within mainland China", **Chaos, Solitons and Fractals** 139:110068 (2020).
221. Chengyi Xia, Carlos Gracia-Lázaro, and Yamir Moreno, "Effect of memory, intolerance, and second- order reputation on cooperation", **Chaos** 30, 063122 (2020).
220. Alberto Aleta, and Yamir Moreno, "Evaluation of the potential incidence of COVID-19 and effectiveness of contention measures in Spain: a data-driven approach", **BMC Medicine** 18:157 (2020).
219. Felipe M. Cardoso, Luisa De Amicis, Silvia Binenti, Carlos Gracia-Lázaro, Angel Sanchez, and Yamir Moreno, "Understanding Drivers when Investing for Impact", **Palgrave Communications** 6:86 (2020).
218. Guilherme Ferraz de Arruda, Giovanni Petri, and Yamir Moreno, "Social contagion models on hypergraphs", **Physical Review Research** 2, 023032 (2020).
217. H. Guo, Z. Song, S. Gecek, X. Li, M. Jusup, M. Perc, Y. Moreno, S. Boccaletti, and Z. Wang, "A novel route to cyclic dominance in voluntary social dilemmas", **Journal of the Royal Society Interface** 17: 20190789 (2020).
216. Thomas Peron, Deniz Eroglu, Francisco A. Rodrigues, and Yamir Moreno, "Collective dynamics of random Janus oscillator networks", **Physical Review Research** 2, 013255 (2020).

215. Jessica Davis, Nicola Perra, Qian Zhang, Yamir Moreno, and Alessandro Vespignani, "Phase Transitions in Information Spreading on Structured Populations", **Nature Physics** 16, 590–596 (2020).
214. Luiz G. A. Alves, Alberto Aleta, Francisco A. Rodrigues, Yamir Moreno, and Luis A. Nunes Amaral, "Anomaly detection in complex networks as a diagnosis of model over-simplification", **New Journal of Physics** 22, 013043 (2020).
213. Guilherme Ferraz de Arruda, Giovanni Petri, Francisco A. Rodrigues, and Yamir Moreno, "Impact of the distribution of recovery rates on disease spreading in complex networks", **Physical Review Research** 2, 013046 (2020).
212. Yamir Moreno, and Matjaz Perc, "Focus on Multilayer Networks", **New Journal of Physics** 22, 010201 (2020). [Editorial article of the Focus Issue]
211. C. T. Martinez-Martinez, J. A. Mendez-Bermudez, Y. Moreno, J. J. Pineda-Pineda, J. M. Sgarreta, "Spectral and localization properties of random bipartite graphs", **Chaos, Solitons and Fractals: X** 3, 100021 (2019).
210. Mario Tovar, Sergio Arregui, Dessislava Marinova, Carlos Martin, Joaquin Sanz, and Yamir Moreno "Bridging the gap between efficacy trials and model-based impact evaluation for new Tuberculosis vaccines", **Nature Communications** 10:5457 (2019).
209. Emmanuel Artiges, Carlos Gracia-Lazaro, Luis Mario Floria, and Yamir Moreno, "Replicator population dynamics of group (n-agent) interactions. Broken symmetry, thresholds for metastability and macroscopic behavior", **Physical Review E** 100, 052307 (2019).
208. Jie Li, Chengyi Xia, Gaoxi Xiao, and Yamir Moreno, "Crash dynamics of interdependent networks", **Scientific Reports** 9:14574 (2019).
207. Thomas Peron, Bruno Messias, Angélica S. Mata, Francisco A. Rodrigues, Yamir Moreno, "On the onset of synchronization of Kuramoto oscillators in scale-free networks", **Physical Review E** 100, 042302 (2019).
206. Alexis R. Hernandez, Carlos Gracia-Lazaro, Edgardo Brigatti, Yamir Moreno, "Analysis of a networked social algorithm for collective selection of a committee of representatives", **PLoS One** 14(9):e0222945 (2019).
205. Paulo C. Ventura da Silva, Fatima Velasquez-Rojas, Colm Connaughton, Federico Vazquez, Yamir Moreno, and Francisco A. Rodrigues, "Epidemic spreading with awareness and different time scales in multiplex networks", **Physical Review E** 100, 032313 (2019).
204. Xiangrong Wang, Alberto Aleta, Dan Lu, Yamir Moreno, "Directionality reduces the impact of epidemics in multilayer networks", **New Journal of Physics** 21, 093026 (2019).
203. Alberto Aleta, Sandro Meloni, Nicola Perra, Yamir Moreno, "Explore with caution: mapping the evolution of scientific interest in Physics", **EPJ Data Science** 8:27 (2019).
202. Roger Cremades, Hermine Mitter, Nicu C Tudose, Anabel Sanchez-Plaza, Anil Graves, Annelies Broekman, Steffen Bender, Carlo Giupponi, Phoebe Koundouri, Muhamad Bahri, Sorin Cheval, Jörg Cortekar, Yamir Moreno, Oscar Melo, Katrin Karner, Cezar Ungurean, Serban O Davidescu, Bernadette Kropf, Floor Brouwer, Mirabela Marin, "Ten Principles to Integrate the Water-Energy-Land Nexus with Climate Services for Co-Producing Local and Regional Integrated Assessments", **Science of the Total Environment** 693, 133662 (2019).
201. Claudia Payrató Borrás, Laura Hernández, and Yamir Moreno, "Breaking the spell of Nestedness", **Physical Review X** 9, 031024 (2019).

200. Emanuele Cozzo, Guilherme Ferraz de Arruda, Francisco A. Rodrigues, and Yamir Moreno, "Layer degradation triggers an abrupt structural transition in multiplex networks", **Physical Review E** 100, 012313 (2019).
199. Alberto Aleta and Yamir Moreno, "The dynamics of collective social behavior in a crowd controlled game", **EPJ Data Science**, 8:22 (2019).
198. Kyriaki Kalimeri, Matteo Delfino, Ciro Cattuto, Daniela Paolotti, Daniela Perrotta, Vittoria Colizza, Caroline Guerrisi, Clement Turbelin, James Duggan, John Edmunds, Chinelo Obi, Richard Peabody, Ricardo Mexia, Ana Franco, Yamir Moreno, Sandro Meloni, Carl Koppeschaar, Charlotte Kjelso "Unsupervised extraction of latent epidemic syndromes from participatory influenza surveillance self-reported symptoms", **PLoS Computational Biology**, 15(4): e1006173 (2019).
197. Terry Brett, George Loukas, Yamir Moreno, and Nicola Perra, "The spreading of computer viruses on time-varying networks", **Physical Review E** 99, 050303(R) (2019).
196. Felipe Maciel Cardoso, Sandro Meloni, Andre Santanche, and Yamir Moreno, "Topical homophily in online social systems", **Frontiers in Physics**, 7:58 (2019).
195. Alberto Aleta, and Yamir Moreno, "Multilayer networks in a nutshell", **Annual Reviews of Condensed Matter Physics**, 10:45-62 (2019).
194. Luiz G. A. Alves, Giuseppe Mangioni, Isabella Cingolani, Francisco A. Rodrigues, Pietro Panzarasa, and Yamir Moreno, "The nested structural organization of the worldwide trade multi-layer network", **Scientific Reports** 9:2866 (2019).
193. Xiangrong Wang, Robert E. Kooij, Yamir Moreno, Piet Van Mieghem, "Structural transition in interdependent networks with regular interconnections", **Physical Review E** 99, 012311 (2019).
192. J. A. Molina, A. Ferrer, J. I. Giménez-Nadal, C. Gracia-Lazaro, Y. Moreno and A. Sanchez, "The effect of kinship on intergenerational cooperation: A lab experiment with three generations", **Review of Economics of the Household** 17(2), 535-552 (2019). First Online April 7th, 2018 (DOI: 10.1007/s11150-018-9414-4).
191. Sergio Arregui, Alberto Aleta, Joaquin Sanz, and Yamir Moreno "Projecting social contact matrices to different demographic structures", **Plos Computational Biology** 14(12): e1006638 (2018).
190. Q.-H. Liu, M. Ajelli, A. Aleta, S. Merler, Y. Moreno, and A. Vespignani "Measurability of the epidemic reproduction number in data-driven contact networks", **Proceedings of the National Academy of Sciences USA** 115, 12680-12685 (2018).
189. Luiz G. A. Alves, Giuseppe Mangioni, Francisco A. Rodrigues, Pietro Panzarasa, and Yamir Moreno, "Unfolding the complexity of the global value chain: Strengths and entropy in the single-layer, multiplex, and multilayer international trade networks", **Entropy** 20, 909 (2018).
188. Julian Vicens, Nereida Bueno-Guerra, Mario Gutiérrez-Roig, Carlos Gracia-Lázaro, Jesús Gómez-Gardenes, Josep Perelló, Angel Sánchez, Yamir Moreno, and Jordi Duch, "Resource heterogeneity leads to unjust effort distribution in climate change mitigation", **PLoS ONE** 13(10): e0204369 (2018).
187. Alejandro Tejedor, Anthony Longjas, Paola Passalacqua, Yamir Moreno, and Efi Foufoula-Georgiou, "River deltas as Multiplex networks: A framework for studying multi-process multi-scale connectivity via coupled-network theory", **Geophysical Research Letters** 45, 9681-9689 (2018).

186. G. Ferraz de Arruda, F. A. Rodrigues, and Y. Moreno, "Fundamentals of spreading processes in single and multilayer complex networks", **Physics Reports** 756, 1-59 (2018).
185. L. Alonso, J. A. Mendez-Bermudez, A. Gonzalez-Melendrez, and Y. Moreno, "Weighted random—geometric and random—rectangular graphs: Spectral and eigenfunction properties of the adjacency matrix", **Journal of Complex Networks** 6, 753-766 (2018).
184. Guilherme F. de Arruda, Emanuele Cozzo, Francisco A. Rodrigues, and Yamir Moreno, "A polynomial eigenvalue approach for multiplex networks", **New Journal of Physics** 20, 095004 (2018).
183. Guido Caldarelli, Sarah Wolf, and Yamir Moreno, "Physics of humans, physics for society", **Nature Physics** 14, 870 (2018).
182. Alejandro Tejedor, Anthony Longjas, Efi Foufoula-Georgiou, Tryphon Georgiou, and Yamir Moreno, "Diffusion Dynamics and Optimal Coupling in Multiplex Networks with Directed Layers", **Physical Review X** 8, 031071 (2018).
181. Alexis R. Hernandez, Carlos Gracia-Lazaro, Edgardo Brigatti, Yamir Moreno, "Robustness of cultural communities in an open-ended Axelrod's model", **Physica A** 509, 492-500 (2018).
180. Jose A. Cuesta, Carlos Gracia-Lázaro, Yamir Moreno, and Angel Sánchez, "Reputation is required for cooperation to emerge in dynamic networks", **Comment to:** Melamed, D., Harrell, A., Simpson, B. (2018). Cooperation, clustering, and assortative mixing in dynamic networks. Proc Natl Acad Sci USA, 201715357. Archived March 2018 .
179. C. Gracia-Lázaro, L. Hernández, J. Borge-Holthoefer, and Y. Moreno, "The joint influence of competition and mutualism on the biodiversity of mutualistic ecosystems", **Scientific Reports** 8, 9253 (2018).
178. E. Cozzo, G. Ferraz de Arruda, F. A. Rodrigues, and Y. Moreno, "Multiplex Networks: Basic Formalism and Structural Properties", **Monograph Springer Briefs in Complexity**, ISBN 978-3-319-92255-3 (2018).
177. P. Piedrahita, J. Borge-Holthoefer, Y. Moreno, and S. González-Bailón, "The Contagion Effects of Repeated Activation in Social Networks", **Social Networks** 54, 326-335 (2018).
176. A. Kartun-Giles, D. Krioukov, J.P. Gleeson, Y. Moreno, and G. Bianconi, "Sparse Power-Law Network Model for Reliable Statistical Predictions Based on Sampled Data", **Entropy** 20, 257 (2018).
175. Sergio Arregui, Dessislava Marinova, Maria Jose Iglesias, Sofia Samper, Carlos Martin, Joaquin Sanz, and Yamir Moreno, "Data-driven model for the assessment of M. Tuberculosis transmission in evolving demographic structures", **Proceedings of the National Academy of Sciences USA** 115, E3238-E3245 (2018).
174. G. Ferraz de Arruda, F. A. Rodrigues, P. Martin-Rodriguez, E. Cozzo, and Y. Moreno, "A General Markov Chain Approach for Disease and Rumor Spreading in Complex Networks", **Journal of Complex Networks** 6, 215-242 (2018).
173. Alexis R. Hernandez, Carlos Gracia-Lazaro, Edgardo Brigatti, Yamir Moreno, "A networked voting rule for democratic representation", **Royal Society Open Science** 5:172265 (2018).
172. J. A. Méndez-Bermúdez, G. Ferraz de Arruda, F. A. Rodrigues, and Y. Moreno, "Diluted banded random matrices: Scaling behavior of eigenfunction and spectral properties", **J. Phys. A: Math. Theor.** 50, 495205 (2017).

171. C. E. Koppeschaar, V. Colizza, C. Guerrisi, C. Turbelin, J. Duggan, W. J. Edmunds, Ch. Kjelsø, R. Mexia, Y. Moreno, S. Meloni, D. Paolotti, D. Perrotta, E. van Straten, A. O. Franco, "INFLUENZANET: Citizens Among Ten Countries Collaborating to Monitor Influenza in Europe", **JMIR Public Health and Surveillance** 3(3):e66 (2017).
170. Z. Wang, Y. Moreno, S. Boccaletti, M. Perc, "Vaccination and epidemics in networked populations – An introduction", **Chaos, Solitons and Fractals** 103, 177-183 (2017).
169. J. A. Méndez-Bermúdez, G. Ferraz de Arruda, F. A. Rodrigues, and Y. Moreno, "Scaling Properties of Multilayer Random Networks", **Physical Review E** 96:012307 (2017).
168. W. Chen, C. Gracia-Lazaro, Z. Li, L. Wang, and Y. Moreno, "Evolutionary dynamics of N-person Hawk-Dove games", **Scientific Reports** 7:4800 (2017).
167. Z. Wang, M. Jusup, R.-W. Wang, L. Shi, Y. Iwasa, Y. Moreno and J. Kurths, "Onymity promotes cooperation in social dilemma experiments", **Science Advances** 3:e1601444 (2017).
166. A. Aleta, Andreia N. S. Hisi, Sandro Meloni, Chiara Poletto, Vittoria Colizza, and Y. Moreno, "Human mobility networks and persistence of rapidly mutating pathogens", **Royal Society Open Science** 4:160914 (2017).
165. A. Aleta, S. Meloni, and Y. Moreno, "A multilayer perspective for the analysis of urban transportation systems", **Scientific Reports** 7:44359 (2017).
164. S. Meloni, C. Xia and Y. Moreno, "Heterogeneous resource allocation can change social hierarchy in public goods games", **Royal Society Open Science** 4:170092 (2017).
163. G. Ferraz de Arruda, E. Cozzo, T. P. Peixoto, F. A. Rodrigues, and Y. Moreno, "Disease Localization in Multilayer Networks", **Physical Review X** 7, 011014 (2017).
162. J. Borge-Holthoefer, R. A. Baños, C. Gracia-Lazaro and Y. Moreno, "Emergence of consensus as a modular-to-nested transition in communication dynamics", **Scientific Reports** 7, 41673 (2017).
161. C. Gracia-Lazaro, L. M. Floria, and Y. Moreno, "Cognitive Hierarchy Theory and Two-person Games", **Games** 8(1), 1-18 (2017).
160. A. Aleta, S. Meloni, M. Perc, and Y. Moreno, "From degree-correlated to payoff-correlated activity for an optimal resolution of social dilemmas", **Physical Review E** 94, 062315 (2016).
159. J. Borge-Holthoefer, Y. Moreno, and T. Yasseri "Editorial: At the Crossroads: Lessons and Challenges in Computational Social Science", **Frontiers in Physics** 4:37 (2016).
158. E. Cozzo and Y. Moreno, "Characterization of multiple topological scales in multiplex networks through supra-Laplacian eigengaps", **Physical Review E** 94, 052318 (2016).
157. Q. Guo, E. Cozzo, Z. Zheng, and Y. Moreno, "Lévy random walks on multiplex network", **Scientific Reports** 6:37641 (2016).
156. E. Estrada, S. Meloni and Y. Moreno, "Epidemic Spreading in Random Rectangular Networks", **Physical Review E** 94, 052316 (2016).
155. C. Guerrisi, C. Turbelin, T. Blanchon, T. Hanslik, I. Bonmarin, D. Levy-Bruhl, D. Perrotta, D. Paolotti, R. Smallenburg, C. Koppeschaar, A. O. Franco, R. Mexia, W. J. Edmunds, B. Sile, R. Pebody, E. van Straten, S. Meloni, Y. Moreno, J. Duggan, C. Kjelsø, and V. Colizza, "Participatory syndromic surveillance of influenza in Europe", **The Journal of Infectious Diseases** 214(S4), S386-S392 (2016).

154. E. Andre, C. Isaacs, D. Affolabi, R. Alagna, D. Brokmann, B. C De Jong , E. Cambau, G. Churchyard, T. Cohen, M. Delmee, J.-Ch. Delvenne, M. Farhat, A. Habib, P. Holme, S. Keshavjee, A. Khan, P. Lightfoot, D. Moore, Y. Moreno, Y. Mundade, M. Pai, S. Patel, A. U. Nyaruhirira, L. E C Rocha, J. Takle, A. Trebucq, J. Creswell, and C. Boehme, "Connectivity of diagnostic technologies: combining data sources to improve surveillance and accelerate TB elimination in the post-2015 era", **International Journal of Tuberculosis and Lung Diseases** 20(8): 999-1003 (2016)
153. J. Poncela-Casasnovas, M. Gutierrez-Roig, C. Gracia-Lazaro, J. Vicens, J. Gomez-Gardenes, J. Perello, Y. Moreno, J. Duch, and A. Sanchez, "Humans display a reduced set of consistent behavioral phenotypes in dyadic games", **Science Advances** 2, e1600451 (2016).
152. J. P. Gleeson, K. P. O'Sullivan, R. A. Baños, Y. Moreno, "Modeling the effects of network structure, competition and memory time on social spreading phenomena", **Physical Review X** 6, 021019 (2016).
151. J. Borge-Holthoefer, N. Perra, B. Goncalves, S. Gonzalez-Bailon, A. Arenas, Y. Moreno, and A. Vespignani, "The dynamics of information-driven coordination phenomena: A transfer entropy analysis", **Science Advances** 2:e1501158 (2016).
150. G. Ferraz de Arruda, E. Cozzo, Y. Moreno, and F. A. Rodrigues "On degree-degree correlations in multilayer networks", **Physica D** 323-324, 5 (2016).
149. S. Arregui, J. Sanz, D. Marinova, C. Martín, and Y. Moreno, "On the impact of Masking and Blocking Hypotheses for measuring efficacy of new tuberculosis vaccines", **PeerJ** 4:e1513 (2016).
148. E. Cozzo, M. Kivela, M. De Domenico, A. Sole-Ribalta, A. Arenas, S. Gómez, M. A. Porter, and Y. Moreno, "Structure of Triadic Relations in Multiplex Networks", **New Journal of Physics** 17(7): 073029 (2015).
147. R. A. Baños, D. Garcia, Y. Moreno, and F. Schweitzer "Sentiment cascades in the 15M movement", **EPJ Data Science** 4:6 (2015).
146. C. Saenz, C. Gracia-Lazaro, and Y. Moreno, "The role of the organization structure in the diffusion of innovations", **PLoS ONE** 10(5):e0126076 (2015).
145. C.-Y. Xia, S. Meloni, M. Perc and Y. Moreno, "Dynamic instability of cooperation due to diverse activity patterns in evolutionary social dilemmas", **EPL** 109, 58002 (2015).
144. C. Poletto, S. Meloni, A. Van Metre, V. Colizza, Y. Moreno and A. Vespignani, "Characterizing two-pathogen competition in spatially structured environments", **Scientific Reports** 5:7895 (2015).
143. J. A. Cuesta, C. Gracia-Lazaro, A. Ferrer, Y. Moreno, and A. Sanchez, "Reputation drives cooperative behavior and network formation in human groups", **Scientific Reports** 5:7843 (2015).
142. R. A. Baños, C. Gracia-Lazaro, and Y. Moreno, "La Física del Comportamiento Humano", **Revista Española de Física** 28(3), 11-15 (2014). [In Spanish, title: The Physics of Human Behavior]
141. G. Ferraz de Arruda, A. Luiz Barbieri, P. Martin Rodriguez, Y. Moreno, L. da Fontoura Costa, and F. A. Rodrigues, "The role of centrality for the identification of influential spreaders in complex networks", **Physical Review E** 90, 032812 (2014).
140. C. Gracia-Lazaro, J. Gomez-Gardenes, L. M. Floria, and Y. Moreno, "Intergroups information exchange drives cooperation in the Public Goods Game", **Physical Review E** 90, 042808 (2014).

139. J. Sanz, C.-Y. Xia, S. Meloni and Y. Moreno, "Dynamics of interacting diseases", **Physical Review X** 4, 041005 (2014).
138. M. Gutierrez-Roig, C. Gracia-Lazaro, J. Perello, Y. Moreno, and A. Sanchez, "Behavioral transition with age in social dilemmas: From reciprocal youth to persistent response in adulthood", **Nature Communications** 5:4362, doi:10.1038/ncomms5362 (2014).
137. G. Ferraz de Arruda, A. Luiz Barbieri, P. Martin Rodriguez, Y. Moreno, L. da Fontoura Costa, and F. A. Rodrigues, "The role of centrality for the identification of influential spreaders in complex networks", **Physical Review E** 90, 032812 (2014).
136. M. Kivela, A. Arenas, M. Barthelemy, J. P. Gleeson, Y. Moreno, and M. A. Porter, "Multilayer Networks", **Journal of Complex Networks** 2, 203-271 (2014).
135. J. Grujic, C. Gracia-Lázaro, M. Milinski, D. Semmann, A. Traulsen, J. A. Cuesta, Y. Moreno, A. Sánchez, "A comparative analysis of spatial Prisoner's Dilemma experiments: Conditional cooperation and payoff irrelevance", **Scientific Reports** 4, 4615 (2014).
134. R. Sanchez-Garcia, E. Cozzo, and Y. Moreno, "Dimensionality reduction and spectral properties of multilayer networks", **Physical Review E** 89, 052815 (2014).
133. S. González-Bailón, N. Wang, A. Rivero, J. Borge-Holthoefer and Y. Moreno, "Assessing the Bias in Samples of Large Online Networks", **Social Networks** 38, 16-27 (2014).
132. R. A. Baños, J. Borge-Holthoefer, Y. Moreno, and S. González-Bailón, "Diffusion dynamics with changing network composition", **Entropy** 15, 4553-4568 (2013).
131. R. Gutiérrez, R. Sevilla-Escoboza, P. Piedrahita, C. Finke, U. Feudel, J. M. Buldú, G. Huerta-Cuellar, R. Jaimes-Reátegui, Y. Moreno, and S. Boccaletti, "Generalized synchronization in relay systems", **Physical Review E** 88, 052908 (2013).
130. E. Cozzo, R. A. Baños, S. Meloni, and Y. Moreno, "Contact-based social contagion in multiplex networks", **Physical Review E** (RC) 88, 050801 (2013).
129. J. Sanz, E. Cozzo, and Y. Moreno, "Data reliability in complex directed networks", **Journal of Statistical Mechanics: Theory and Experiment**, P12008 (2013).
128. J. A. Molina, J. I. Giménez-Nadal, J. A. Cuesta, C. Garcia-Lazaro, Y. Moreno, and A. Sánchez, "Gender differences in cooperation: experimental evidence on high school students", **PLoS ONE** 8(12): e83700 (2013).
127. P. Piedrahita, J. Borge-Holthoefer, Y. Moreno and A. Arenas, "Modeling self-sustained activity cascades in socio-technical networks", **EPL** 104, 48004 (2013).
126. Z. Wang, C.-Y. Xia, S. Meloni, C.-S. Zhou and Y. Moreno, "Impact of social punishment on cooperative behavior in complex networks", **Scientific Reports** 3, 3055 (2013).
125. M. De Domenico, A. Sole-Ribalta, E. Cozzo, M. Kivela, Y. Moreno, M. A. Porter, S. Gómez, and A. Arenas, "Mathematical formulation of multi-layer networks", **Physical Review X** 3, 041022 (2013).
124. C. Gracia-Lázaro, L. M. Floría, J. Gómez-Gardeñes and Y. Moreno, "Cooperation in changing environments: Irreversibility in the transition to cooperation in complex networks", **Chaos, Solitons and Fractals** 56 188 (2013).
123. C. Poletto, S. Meloni, V. Colizza, Y. Moreno and A. Vespignani, "Host mobility drives pathogen competition in spatially structured populations", **PLoS Computational Biology** 9(8): e1003169 (2013).

122. R. A Baños, J. Borge-Holthoefer and Y. Moreno, "The role of hidden influentials in the diffusion of online information cascades", **EPJ Data Science** 2:6 (2013).
121. J. Borge-Holthoefer, R. A. Baños, S. González-Bailón and Y. Moreno, "Cascading Behavior in Complex Socio-technical Networks", **Journal of Complex Networks** 1, 3-24 (2013).
120. S. González-Bailón, J. Borge-Holthoefer, and Y. Moreno, "Broadcasters and Hidden Influentials in Online Protest Diffusion", **American Behavioral Scientist** 57, 943-965 (2013).
119. M. Perc, J. Gómez-Gardeñes, A. Szolnoki, L. M. Floría and Y. Moreno, "Evolutionary dynamics of group interactions on structured populations ? A review", **Journal of the Royal Society Interface** 10, 20120997 (2013).
118. S. Gómez, A. Díaz-Guilera, J. Gómez-Gardeñes, C. J. Pérez-Vicente, Y. Moreno, and A. Arenas, "Diffusion dynamics on multiplex networks", **Physical Review Letters** 110, 028701 (2013).
117. J. Borge-Holthoefer, S. Meloni, B. Gonçalves, and Y. Moreno, "Emergence of influential spreaders in modified rumor models", **Journal of Statistical Physics** 151, 383 (2013).
116. C. Y. Xia, Z. Wang, J. Sanz, S. Meloni, and Y. Moreno, "Effects of delayed recovery and nonuniform transmission on the spreading of diseases in complex networks", **Physica A** 392, 1577 (2013).
115. L. Prignano, Y. Moreno, and A. Díaz-Guilera, "Exploring complex networks by means of adaptive walkers", **Physical Review E** 86, 066116 (2012).
114. J. Gómez-Gardeñes, C. Gracia-Lázaro, L. M. Floría and Y. Moreno, "Evolutionary Dynamics on Interdependent Networks", **Physical Review E** 86, 056113 (2012).
113. J. Iranzo, L. M. Floría, Y. Moreno, and A. Sánchez "Empathy emerges spontaneously in the ultimatum game: Small groups and networks", **PLoS ONE** 7, e43781 (2012).
112. E. Cozzo, A. Arenas, and Y. Moreno, "Stability of Boolean Multilevel Networks", **Physical Review E** 86, 036115 (2012).
111. J. Sanz, L. M. Floría, and Y. Moreno, "Dynamics of Persistent Infections in Homogeneous Populations". **International Journal of Bifurcation and Chaos** 22, 1250164 (2012).
110. C. Gracia-Lázaro , A. Ferrer , G. Ruíz , A. Tarancón , J. A. Cuesta , A. Sánchez, and Y. Moreno, "Heterogeneous networks do not promote cooperation when humans play a Prisoner's Dilemma", **Proceedings of the National Academy of Sciences USA** 109, 12922-12926 (2012).
109. J. Borge-Holthoefer, Y. Moreno, and A. Arenas, "Topological vs. Dynamical Robustness in a Lexical Network". **International Journal of Bifurcation and Chaos** 22, 1250157 (2012).
108. J. Sanz, E. Cozzo, J. Borge-Holthoefer, and Y. Moreno, "Topological effects of data incompleteness of gene regulatory networks", **BMC Systems Biology** 6:110 (2012).
107. S. Meloni, J. Gomez-Gardenes, V. Latora, and Y. Moreno, "Effects of degree heterogeneity in flow fluctuations on complex networks", **International Journal of Bifurcation and Chaos** 22, 1250170 (2012).
106. A. Cardillo, S. Meloni, J. Gomez-Gardeñes, and Y. Moreno, "Velocity-enhanced Cooperation of Moving Agents playing Public Goods Games", **Physical Review E** 85, 067101 (2012).

105. J. Borge-Holthoefer, A. Rivero, and Y. Moreno, "Locating privileged information spreaders during political protests on an Online Social Network", **Physical Review E** 85, 066123 (2012).
104. C. Xia, S. Meloni, and Y. Moreno, "Effects of environment knowledge on agglomeration and cooperation in spatial Public Goods Games", **Advances in Complex Systems** 15, 1250056 (2012).
103. I. Leyva, R. Sevilla-Escoboza, J. M. Buldu, I. Sendiña-Nadal, J. Gómez-Gardeñes, A. Arenas, Y. Moreno, S. Gómez, R. Jaimes-Reátegui, and S. Boccaletti, "Non-equilibrium first-order transition to synchrony in networks of chaotic oscillators", **Physical Review Letters** 108, 168702 (2012).
102. C. Gracia-Lazaro, J. A. Cuesta, A. Sánchez, and Y. Moreno, "Human behavior in Prisoner's Dilemma experiments suppresses network reciprocity", **Scientific Reports** 2, 325 (2012).
101. J. Borge-Holthoefer, and Y. Moreno, "Absence of influential spreaders in rumor dynamics", **Physical Review E** 85, 026116 (2012).
100. S. Gonzalez, J. Borge-Holthoefer, A. Rivero, and Y. Moreno, "The Dynamics of Protest Recruitment through an Online Network", **Scientific Reports**, 1, 197 (2011).
99. C. Gracia-Lazaro, F. Quihandría, L. Hernandez, L. M. Floria, and Y. Moreno, "Co-evolutionary network approach to cultural dynamics controlled by intolerance", **Physical Review E**, 84, 067101 (2011).
98. S. Gómez, J. Gomez-Gardenes, Y. Moreno, and A. Arenas, "Non-perturbative heterogeneous mean-field approach to epidemic spreading in complex networks", **Physical Review E**, 84, 036105 (2011).
97. S. Meloni, N. Perra, A. Arenas, S. Gomez, Y. Moreno, and A. Vespignani, "Modeling Human Mobility Responses to the Large-scale Spreading of Infectious Diseases". **Scientific Reports**, 1, 62 (2011).
96. J. Borge-Holthoefer, A. Rivero, I. Garcia, E. Cauhe, A. Ferrer, D. Ferrer, D. Francos, D. Iñiguez, M. P. Perez, G. Ruiz, F. Sanz, F. Serrano, C. Viñas, A. Tarancon, and Y. Moreno, "Structural and Dynamical Patterns on Online Social Networks: the Spanish May 15th Movement as a case study". **PLoS ONE**, 6(8): e23883 (2011).
95. J. Borge-Holthoefer, Y. Moreno, and A. Arenas, "Modeling abnormal priming in Alzheimer's patients with a Free Association network". **PLoS ONE**, 6(8): e22651, 2011.
94. J. Sanz, J. Navarro, A. Arbues, C. Martin, P. C. Marijuan, and Y. Moreno, "The Transcriptional Regulatory Network of Mycobacterium Tuberculosis". **PLoS ONE**, 6(7): e22178, 2011.
93. M. Starnini, A. Sánchez, J. Poncela, and Y. Moreno, "Coordination and Growth: The Stag Hunt Game on Evolutionary Networks". **Journal of Statistical Mechanics: Theory and Experiment**, P050008 (2011).
92. J. Poncela, J. Gomez-Gardenes, and Y. Moreno, "Cooperation in Scale-Free Networks with Limited Associative Capacities". **Physical Review E**, 83, 057101 (2011).
91. C. Gracia Lazaro, L. M. Floria, and Y. Moreno, "Selective advantage of tolerant cultural traits in the Axelrod-Schelling model". **Physical Review E**, 83, 056103 (2011).
90. J. Gomez-Gardenes, Y. Moreno, and A. Arenas, "Evolution of Microscopic and Mesoscopic Synchronized Patterns in Complex Networks". **Chaos**, 21, 016105 (2011).

89. J. Gomez-Gardenes, S. Gómez, A. Arenas, and Y. Moreno, "Explosive Synchronization Transitions in Scale-Free Networks", **Physical Review Letters**, 106, 128701 (2011).
88. S. Gómez, A. Arenas, J. Borge-Holthoefer, S. Meloni, and Y. Moreno, "Probabilistic Framework for Epidemic Spreading in Complex Networks". **International Journal of Complex Systems in Science**, 1, 47-54 (2011).
87. J. Gomez-Gardenes, G. Zamora-López, Y. Moreno, and A. Arenas, "From Modular to Centralized Organization of Synchronization in Functional Areas of the Cat Cerebral Cortex", **PLoS ONE**, 5(8), e12313 (2010).
86. A. H. Rodríguez and Y. Moreno, "Effects of Mass Media Action on the Axelrod Model with Social Influence", **Physical Review E**, 82, 016111 (2010).
85. J. Sanz, L. M. Floria, and Y. Moreno, "Spreading of Persistent Infections in Heterogeneous Populations", **Physical Review E**, 81, 056108 (2010). APS Physics published a Synopsis.
84. B. Guerra, J. Poncela, J. Gomez-Gardenes, V. Latora, and Y. Moreno, "Dynamical Organization towards Consensus in the Axelrod Model on Complex Networks", **Physical Review E**, 81, 056105 (2010).
83. J. Poncela, J. Gomez-Gardenes, L. M. Floria, and Y. Moreno, "Cooperation in the Prisoner's Dilemma Game in Random Scale-Free Graphs", **International Journal of Bifurcation and Chaos**, 20, 849-857 (2010).
82. S. Gómez, A. Arenas, J. Borge-Holthoefer, S. Meloni, and Y. Moreno, "Discrete-time Markov Chain Approach to Contact-based Disease Spreading in Complex Networks", **Europhysics Letters**, 89, 38009 (2010).
81. J. Poncela, J. Gomez-Gardenes, L.M. Floría, Y. Moreno and A. Sánchez, "Cooperative Scale-Free Networks despite the Presence of Defector Hubs", **Europhysics Letters**, 88, 38003 (2009).
80. C. Gracia-Lazaro, L. F. Lafuerza, L. M. Floria, and Y. Moreno, "Residential Segregation and Cultural Dissemination: An Axelrod-Schelling Model", **Physical Review E**, 80, 046123 (2009).
79. S. Meloni, A. Arenas, and Y. Moreno, "Traffic-Driven Epidemic Spreading in Finite-Size Scale-Free Networks", **Proceedings of the National Academy of Sciences USA**, 106, 16897-16902 (2009).
78. R. Sinatra, J. Iranzo, J. Gomez-Gardenes, V. Latora, L. M. Floria, and Y. Moreno, "The Ultimatum Game in Complex Networks", **Journal of Statistical Mechanics: Theory and Experiment**, P09012 (2009).
77. J. Poncela, J. Gomez-Gardenes, A. Traulsen, and Y. Moreno, "Evolutionary Game Dynamics in a Growing Structured Population", **New Journal of Physics**, 11, 083031 (2009).
76. S. Meloni, A. Buscarino, L. Fortuna, M. Frasca, J. Gomez-Gardenes, V. Latora and Y. Moreno, "Effects of Mobility in a Population of Prisoner's Dilemma Players", **Physical Review E**, 79, 067101 (2009).
75. A. Díaz-Guilera, J. Gomez-Gardenes, Y. Moreno, M. Nekovee, "Synchronization of Kuramoto oscillators in Random Geometric Graphs", **International Journal of Bifurcation and Chaos**, 19, 687-693 (2009).
74. L. M. Floria, C. Gracia-Lazaro, J. Gomez-Gardenes, and Y. Moreno, "Social Network Reciprocity as a Phase Transition in Evolutionary Cooperation", **Physical Review E**, 79, 026106 (2009).

73. A. Arenas, A. Diaz-Guilera, J. Kurths, Y. Moreno, and C. Zhou, "Synchronization in Complex Networks ", **Physics Reports**, 469, 93-153 (2008).
72. M. Nekovee and Y. Moreno, "Dynamics of Gossip-like Information Dissemination in Complex Computer Networks", **International Journal of Computer Mathematics** 85, 1165 (2008).
71. S. Meloni, J. Gomez-Gardenes, V. Latora and Y. Moreno, "Scaling Breakdown in Flow Fluctuations on Complex Networks", **Physical Review Letters**, 100, 208701 (2008).
70. J. Gomez-Gardenes, J. Poncela, L. M. Floria, and Y. Moreno, "Natural Selection of Cooperation and Degree Hierarchy in Heterogeneous Populations", **Journal of Theoretical Biology**, 253, 296 (2008).
69. J. Poncela, J. Gomez-Gardenes, L.M. Floría, A. Sánchez and Y. Moreno, "Complex Cooperative Networks from Evolutionary Preferential Attachment", **PLoS ONE**, 3, e2449 (2008).
68. J. Gomez-Gardenes, V. Latora, Y. Moreno, and E. Profumo, "Spreading of Sexually Transmitted Diseases in Heterosexual Populations", **Proceedings of the National Academy of Sciences USA**, 105, 1399 (2008).
67. J. Gomez-Gardenes, Y. Moreno, and A. Arenas, "Synchronizability Determined by Coupling Strengths and Topology on Complex Networks", **Physical Review E**, 75, 066106 (2007).
66. J. Poncela, J. Gomez-Gardenes, L. M. Floria, and Y. Moreno, "Robustness of Cooperation in the Evolutionary Prisoner's Dilemma on Complex Networks ", **New Journal of Physics**, 9, 184 (2007).
65. J. Gomez-Gardenes, and Y. Moreno, "Synchronization of Networks with Variable Local Properties", **International Journal of Bifurcation and Chaos**, 17, 2501 (2007).
64. J. Gomez-Gardenes, M. Campillo, L. M. Floria, and Y. Moreno, "Dynamical Organization of Cooperation in Complex Topologies", **Physical Review Letters**, 98, 108103 (2007).
63. J. Gomez-Gardenes, Y. Moreno, and A. Arenas, "Paths to Synchronization on Complex Networks", **Physical Review Letters**, 98, 034101 (2007).
62. M. Nekovee, Y. Moreno, G. Bianconi, and M. Marsili, "Theory of Rumor Spreading in Complex Social Networks", **Physica A** 374, 457 (2007).
61. R. Lopez-Ruiz, Y. Moreno, S. Boccaletti, D.-U. Hwang, A. F. Pacheco, "Awaking and Sleeping a Complex Network", **Neural Networks** 20, 102 (2007). 137. J. Gomez-Gardenes and Y. Moreno, "From Scale-Free to Erdos-Renyi Networks", **Physical Review E**, 73, 056124 (2006).
60. S. Boccaletti, V. Latora, Y. Moreno, M. Chavez and D.-U. Hwang, "Complex Networks: Structure and Dynamics", **Physics Reports**, 424, 175-308 (2006).
59. F. Wang, Y. Moreno, and Y. Sun "Structure of Peer-to-Peer Social Networks", **Physical Review E**, 73, 036123 (2006).
58. J. Gomez-Gardenes, P. Echenique, and Y. Moreno, "Immunization of Real Complex Communication Networks", **European Physical Journal B** 49, 259 (2006).
57. J. Gomez-Gardenes, Y. Moreno, and L. M. Floria, "Scale-Free Topologies and Activatory-Inhibitory Interactions", **Chaos** (Focus Issue) 16, 015114 (2006).

56. P. Echenique, J. Gomez-Gardenes, and Y. Moreno, "Dynamics of Jamming Transitions in Complex Networks", **Europhysics Letters**, 71, 325 (2005).
55. P. Echenique, J. Gomez-Gardenes, Y. Moreno, and A. Vazquez, "Distance-d Covering Problems in Scale-Free Networks with Degree Correlations", **Physical Review E**, 71, 035102(R) (2005).
54. D.-U. Hwang, S. Boccaletti, Y. Moreno, and R. Lopez-Ruiz, "Thresholds for Epidemic Outbreaks in Finite Scale-Free Networks", **Mathematical Biosciences and Engineering** 2, 317-27 (2005).
53. J. Gomez-Gardenes, Y. Moreno, and L. M. Floria, "On the Robustness of Complex Heterogeneous Gene Expression Networks", **Biophysical Chemistry** 115, 225 (2005).
52. J. Gomez-Gardenes, Y. Moreno, and L. M. Floria, "Michaelis-Menten Dynamics in Complex Heterogeneous Networks", **Physica A** 352, 265-81 (2005).
51. P. Echenique, J. Gomez-Gardenes, and Y. Moreno, "Improved Routing Strategies for Internet Traffic Delivery", **Physical Review E**, 70, 056105 (2004).
50. Y. Moreno, M. Vazquez-Prada, and A. F. Pacheco, "Fitness for Synchronization of Network Motifs", **Physica A** 343, 279 (2004).
49. Y. Moreno, and A. F. Pacheco "Synchronization of Kuramoto Oscillators in Scale-Free Networks", **Europhysics Letters**, 68, 603 (2004).
48. Y. Moreno, M. Nekovee, A. F. Pacheco, "Dynamics of Rumor Spreading in Complex Networks", **Physical Review E**, 69, 066130 (2004).
47. Y. Moreno, M. Nekovee, A. Vespignani, "Efficiency and Reliability of Epidemic Data Dissemination in Complex Networks", **Physical Review E**, 69, 055101(R) (2004).
46. J. Gomez-Gardenes, and Y. Moreno, "Local versus Global Knowledge in the Barabasi-Albert Scale-free Network Model", **Physical Review E**, 69, 037103(2004).
45. Y. Moreno, J. B. Gomez, A. F. Pacheco, "Epidemic Incidence in Correlated Complex Networks", **Physical Review E**, 68, 035103(R) (2003).
44. Y. Moreno, M. Vazquez-Prada, J. B. Gomez, A. F. Pacheco, "Error Diagrams and Temporal Correlations in a Fracture Model with Characteristic and Power-Law Distributed Avalanches", **European Physical Journal B** 34, 489 (2003).
43. O. E. Yewande, Y. Moreno, F. Kun, R. Cruz, H. J. Herrmann, "Time Evolution of Damage under Variable Ranges of Load Transfer", **Physical Review E**, 68, 026116 (2003).
42. F. Kun, Y. Moreno, R. Cruz, H. J. Herrmann, "Creep Rupture has two Universality Classes", **Europhysics Letters**, 63, 347 (2003).
41. G. Dill-Langer, R. Cruz, F. Kun, Y. Moreno, S. Aicher, and H. J. Herrmann, "Size Dependency of Tension Strength in Natural Fiber Composites", **Physica A** 325, 547 (2003).
40. A. Vazquez, M. Boguna, Y. Moreno, R. Pastor-Satorras, A. Vespignani, "Topology and Correlations in Structured Scale-Free Networks", **Physical Review E**, 67, 046111 (2003).
39. Y. Moreno, R. Pastor-Satorras, A. Vazquez, A. Vespignani, "Critical Load and Traffic Instabilities in Scale-Free Networks", **Europhysics Letters**, 62, 292 (2003).
38. Y. Moreno and A. Vazquez, "Disease Spreading in Structured Scale-Free Networks", **European Physical Journal B** 31, 265 (2003).

37. A. Vazquez, Y. Moreno, "Resilience to Damage of Graphs with Degree Correlations", **Physical Review E**, 67, 015101(R) (2003).
36. Y. Moreno, R. Pastor-Satorras, A. Vespignani, "Epidemic Outbreaks in Complex Heterogeneous Networks", **European Physical Journal B** 26, 521 (2002).
35. R. Cruz, Y. Moreno, F. Kun, H. J. Herrmann, "Fracture Model with Variable Range of Interaction", **Physical Review E**, 65, 046148 (2002).
34. Y. Moreno, J. B. Gomez, A. F. Pacheco, "Instability of Scale-Free Networks under Node-Breaking Avalanches", **Europhysics Letters**, 58 (4), 630 (2002).
33. Y. Moreno, A. Vazquez, "The Bak-Sneppen Model on Scale-Free Networks", **Europhysics Letters**, 57 (5), 765 (2002).
32. L. Moral, J. B. Gomez, Y. Moreno, A. F. Pacheco, "Exact Numerical Solution for a Time-Dependent Fiber-Bundle Model with Continuous Damage", **Journal of Physics A: Mathematical and General** 34, 9983 (2001).
31. L. Moral, Y. Moreno, J. B. Gomez, A. F. Pacheco, "Time Dependence of Breakdown in a Global Fiber-Bundle Model with Continuous Damage", **Physical Review E**, 63, 066106 (2001).
30. Y. Moreno, J. B. Gomez, A. F. Pacheco, "Phase Transitions in Load Transfer Models of Fracture", **Physica A** 296, 9 (2001).
29. Y. Moreno, A. Correig, J. B. Gomez, A. F. Pacheco, "A Model for Complex Aftershock Sequences", **Journal of Geophysical Research** 106, B4, 6609 (2001).
28. Y. Moreno, J. B. Gomez, A. F. Pacheco, "Fracture and Second-Order Phase Transitions", **Physical Review Letters**, 85, 2865 (2000).
27. Y. Moreno, J. B. Gomez, A. F. Pacheco, "Modified Renormalization Strategy for Sandpile Models", **Physical Review E**, 60, 7565 (1999).
26. Y. Moreno, J. B. Gomez, A. F. Pacheco, "Self-Organized Criticality in a Fiber-Bundle Type Model", **Physica A** 274, 400 (1999).
25. M. Vazquez-Prada, J. B. Gomez, Y. Moreno, A. F. Pacheco, "Time to Failure of Hierarchical Load-Transfer Models of Fracture", **Physical Review E**, 60, 2581 (1999).
24. J. B. Gomez, M. Vazquez-Prada, Y. Moreno, A. F. Pacheco, "Bounds for the Time to Failure of Hierarchical Systems of Fracture", **Physical Review E**, 58, R1287 (1999).
23. J. B. Gomez, Y. Moreno, A. F. Pacheco, "Probabilistic Approach to Time-Dependent Load-Transfer Models of Fracture", **Physical Review E**, 58, 1528 (1998).
22. O. Sotolongo, Y. Moreno, J. J. Llovera, J. C. Antoranz, "Criticality in Droplet Fragmentation", **Physical Review Letters**, 76, 42 (1996).

BOOK CHAPTERS

21. J. Borge-Holthoefer, Y. Moreno, and T. Yasseri (Editors) "**At the Crossroads: Lessons and Challenges in Computational Social Science**", Frontiers Research Topic Ebook, Lausanne: Frontiers Media, ISBN: 9782889450213 (2016).
20. E. Cozzo, G. F. de Arruda, F. A. Rodriguez, and Y. Moreno, "Multilayer networks: metrics and spectral properties", Chapter contribution to the book "**Interconnected networks**", edited by F. Schweitzer and A. Garas, Springer, ISBN 978-3-319-23947-7 (2016).

19. S. González-Bailón, J. Borge-Holthoefer and Y. Moreno, "Online Networks and the Diffusion of Protest", Chapter contribution to **Analytical Sociology: Norms, Actions and Networks**, 2014.
18. J. Borge-Holthoefer, S. González-Bailón, A. Rivero, and Y. Moreno, "The Spanish Indignados Movement: Time dynamics, geographical distribution, and recruitment mechanisms", Chapter contribution to **Online Collective Action**, 2014.
17. E. Cozzo, J. Sanz, and Y. Moreno, "Dynamics of Biomolecular Networks". Chapter contribution to the **Encyclopedia of Molecular Cell Biology and Molecular Medicine**. (Edited by Robert A. Meyers), ISBN: 978-3-527-32607-5 (Wiley-VCH, Weinheim, 2012).
16. J. Poncela, J. Gomez-Gardenes, L. M. Floría, and Y. Moreno, "Growing Networks Driven by the Evolutionary Prisoner's Dilemma Game". Chapter contribution to the **Handbook of Optimization in Complex Networks. Springer Optimization and Its Applications**, Vol. 57, Thai, My T.; Pardalos, Panos M. (Eds.) 2012.
15. S. Meloni, A. Arenas, S. Gómez, J. Borge-Holthoefer, and Y. Moreno, "Modeling Epidemic Spreading in Complex Networks: Concurrency and Traffic". Chapter contribution to the **Handbook of Optimization in Complex Networks Springer Optimization and Its Applications**, Vol. 57, Thai, My T.; Pardalos, Panos M. (Eds.) 2012.
14. A. H. Rodríguez, and Y. Moreno, "Dyadic and Social Influence on the Axelrod Model with Clever Mass Media", Chapter contribution to the collection **"Mass Media: Coverage, Objectivity and Changes"**, Nova Publisher, (2010).
13. **"Handbook on Biological Networks"**. Editors: S. Boccaletti, V. Latora and Y. Moreno, World Scientific, Singapore. 450pp (approx.), December 2009. ISBN 978-981-283-879-7.
12. Y. Moreno, "Complex Network Modeling: A New Approach to Neurosciences", Chapter contribution in: **"Coordinated Activity in the Brain: Measurements and Relevance to Brain Function and Behavior"**, Springer Verlag, (2009). Hardcover (ISBN: 978-0-387-93796-0).
11. R. Sinatra, J. Gomez-Gardenes, Y. Moreno, L.M. Floría, D. Condorelli and V. Latora, "Structural and Dynamical Properties of Cellular Regulatory Networks", in **"Statistical Mechanics of Cellular Systems and Processes"**, Edited by M.H. Zaman, Cambridge University Press, (2009). Hardback (ISBN-13: 9780521886086).
10. L. M. Floría, Y. Moreno, and J. Gomez-Gardenes, "The Modeling of Biological Networks", **Physics of Complex Systems and Life Sciences**, Book Chapter, Edited by M. A. F. Sanjuan, (Research Signpost, 2007).

OTHER PUBLICATIONS

9. R. Criado, M. Romance, J. Gomez-Gardenes, and Y. Moreno, "Editorial to the Special Issue", **International Journal of Bifurcation and Chaos** 22, 1202005 (2012).
8. S. Havlin, M. Nekovee, and Y. Moreno, "Focus on Complex Networked Systems: Theory and Application", **New Journal of Physics**, 9, (2007) (Editorial to the Focus Issue).
7. J. Clemente, Y. Moreno, J. F. Saenz and A. Velazquez, "From Physics to Biology: The interface between Experiment and Computation" (Editorial paper introducing the AIP Volume). **AIP Conference Proceedings**, 851, 1 (2006).
6. M. Nekovee and Y. Moreno, "Rumor-like Information Dissemination in Complex Computer Networks", **Proceedings from the Fifth International Conference on Complex Systems**, Springer Complexity Series, (2009).

5. Y. Moreno, "The Emergence of Collective Behavior in Complex Topologies", **Proceedings of the Conference NET-WORKS'07**, 97 (2007).
4. Y. Moreno, L. M. Floria and J. Gomez-Gardenes "Current Trends in the Modeling of Biological Networks", **AIP Conference Proceedings**, 851, 150 (2006).
3. O. Sotolongo, Y. Moreno, E. López-Pages, F. Barreras. "Fractal Viewpoint in Transition to Scaling in Atomization", **Proceedings of the Joint Meeting of the Sections of The Combustion Institute**, Madeira, Spain. 1996.
2. J. J. Llovera, Y. Moreno, A. Sotto. "Bubble Nucleation in Water/Gas Oil Emulsions. The Influence of Water Fraction and the Surfactant Fraction", **Proceedings of III Caribbean Congress on Fluid Dynamics and III Latin-American Symposium on Fluid Mechanics**, Caracas, Venezuela, 1995.
1. Y. Moreno, J. J. Llovera, O. Sotolongo. "Droplet Size Distribution Function in W/O Emulsions", **Proceedings of III Caribbean Congress on Fluid Dynamics and III Latin-American Symposium on Fluid Mechanics**, Caracas, Venezuela, 1995.

ADVISING AND MENTORING

• Ph.D. Students

- Ariadna Fosch. Started September 2021.
- Mario Tovar. Started September 2019.
- Alfonso de Miguel. Started September 2019.
- Claudia Martinez, (co-advised with A. Bermudez). PhD student at Benemerita Universidad Autonoma de Puebla, Mexico. Started Sept 2018.
- Lu Dan. Started September 2017.
- Claudia Payrato. Date of Dissertation: December, 2020. Mark: Highest mark of "Apto".
- Felipe Cardoso. Date of Dissertation: December, 2020. Mark: Highest mark of "Apto with proposition for Cum Laude".
- Alberto Aleta. Date of Dissertation: December, 2019. Mark: Highest mark of "Apto with proposition for Cum Laude".
- Sergio Arregui. Date of Dissertation: November, 2018. Mark: Highest mark of "Apto with proposition for Cum Laude".
- Guilherme Ferraz de Arruda, University of Sao Paulo at Sao Carlos. Date of Dissertation: December, 2017.
- Pablo Piedrahita, Date of Dissertation: September, 2017. Mark: Highest mark of "Apto with proposition for Cum Laude".
- Emanuele Cozzo, Date of Dissertation: February 2, 2016. Mark: Highest mark of "Apto with proposition for Cum Laude". Currently, he is a postdoctoral fellow at Universitat de Barcelona, Spain.
- Joaquín Sanz, Date of Dissertation: October 22, 2014. Mark: Highest mark of "Apto with proposition for Cum Laude". After a postdoctoral stay at the L. Barreiro Lab, CHU Sainte-Justine, Cote Sainte-Catherine, Montreal, Québec, Canada, he is currently back at the Institute for Biocomputation and Physics of Complex Systems at the University of Zaragoza as a Senior Ramón y Cajal Researcher (tenure-track position).
- Raquel Álvarez, Date of Dissertation: July 11, 2014. Mark: Highest mark of "Apto with proposition for Cum Laude". Currently, she is a software developer at The Rutherford Appleton Laboratory, United Kingdom.
- Carlos Gracia Lázaro, Date of Dissertation: November 27, 2012. Mark: Highest mark of "Apto with proposition for Cum Laude". Currently, he is a Postdoctoral fellow in our group (COSNET Lab, <http://cosnet.bifi.es>) at the University of Zaragoza, Spain.
- Sandro Meloni, Date of Dissertation: May 2011. (co-supervised with S. Panzieri, University of Rome III). Currently he is a tenure research scientist of the Spanish National Research Council at IFISC, in the Balearic Islands, Spain.

- Julia Poncela Casasnovas, "Evolutionary Games in Complex Topologies: Interplay between Structure and Dynamics". Date of Dissertation: October 20, 2010. Mark: Summa Cum Laude. She was a Postdoctoral fellow in the group of Prof. Luis N. Amaral, Northwestern University, USA (2010-2014). Currently she is at Universitat Rovira I Virgili, Tarragona, Spain.
- Pablo Echenique Robba, "A Bottom-Up Physical Approach from Small Peptides to Proteins. Methods and ab-Initio Potentials". Date of Dissertation: December 15, 2006. Mark: Summa Cum Laude. Currently he is a tenure research scientist of the Spanish National Research Council.
- Jesus Gomez-Gardenes, "Complex Systems: Nonlinearity and Structural Complexity in Spatially Extended and Discrete Systems". Date of Dissertation: December 14, 2006. Mark: Summa Cum Laude and award to the best PhD Thesis of the University of Zaragoza. Currently he associate professor of Physics at the University of Zaragoza.
- **Supported Postdocs, PhD Students and other Personnel.**
 - MSc. Ariadna Fosch, PhD student at University of Zaragoza. Jul 2021-
 - Dr. Alberto Aleta, PhD at University of Zaragoza. Jan 2020-
 - MSc. Claudia Payrato, PhD student at University of Cergy-Pontoise and University of Zaragoza. Feb 2020- Sept 2020.
 - MSc. Mario Tovar, PhD student at University of Zaragoza. Dec 2018- Sept 2019.
 - Dr. Lucas Jeub, PhD Oxford University. May 2019-June 2020.
 - Dr. Guilherme F. de Arruda, PhD USP at Sao Carlos, Brazil. April 2018- .
 - Dr. Agnieszka Czaplicka, PhD Warsaw University. March 2017- March 2018.
 - M.Sc. Felipe M. Cardoso, PhD student. Nov 2016- .
 - Dr. Emanuele Cozzo, PhD at the University of Zaragoza. March 2016-March 2017.
 - Dr. Alejandro Rivero, Ph.D at the University of Zaragoza. 06/2013-12/2013.
 - Dr. Carlos Gracia-Lázaro, PhD at the University of Zaragoza. 12/2012-
 - Dr. Javier Borge-Holthoefer, PhD at the University of Tarragona. 09/2010-11/2013.
 - Dr. Sandro Meloni, PhD at the University of Rome III. 02/2011-03/2014
 - Sergio Arregui. 09/2013- 09/2014.
 - Alfredo Ferrer. 01/2013-03/2013, and 01/2016-12/2016.
 - Pablo Piedrahita. 09/2012-12/2012.
 - Alessio Cardillo 02/2013-02/2014.
- **Hosted and Partially Supported Visiting Scientists and Students.**
 - PhD Student, Marta Tuninetti. ISI Foundation, Turin, Italy. Sept 2019-February 2020.
 - Dr. Henrique Ferraz de Arruda, USP at Sao Carlos, Brazil. Oct 2019-Oct 2020.
 - PhD Student, Claudia Martinez, Benemérita Universidad Autónoma de Puebla, Mexico. Sept 2019-Sept 2020.
 - PhD Student, Paulo Cesar Ventura da Silva, USP at Sao Carlos, Brazil. Sept 2019-Sept 2020.
 - Dr. Thomas Peron, USP at Sao Carlos, Brazil. Nov 2018-Nov 2019.
 - Dr. Chengyi Xia, Tianjin University, China. Nov 2018-May 2019.
 - MSc. Francesca Priante, University of Padua. March 2018- September 2018.
 - PhD Student Ana Lucia Schmidt, IMT Lucca. March 2017-September 2017.
 - Graduate Student, Ana Paula dos Reis, University of Sao Paolo, Brazil. December/2016-March/ 2017.
 - PhD Student Wei Chen, School of Electro-Mechanical Engineering, Xidian University, Xi'an 710071, China. March 2016-March 2017.
 - Dr. Alexis Hernandez. University of Rio de Janeiro, Brazil. June 2016-June 2016.
 - PhD Student, Guilherme F. de Arruda, University of Sao Paolo, Brazil. July/2015-July/ 2016
 - M.Sc. Bianca Oe, State University of Campinas, Brazil. Jan 2016-July 2016.
 - M.Sc. Felipe Cardoso, State University of Campinas, Brazil. Sept 2015-Feb 2016.

TEACHING
EXPERIENCE

- M.Sc. Quantong Guo, Beihang University, Beijing, China. Sept 2014-Sept 2015.
- M.Sc. Francesco Chiaravalloti, University of Calabria. Nov. 2013-May 2014.
- Dr. Chengyi Xia, Tianjin University, China. Sept 2011-Aug 2012.
- Dr. Arezky Hernández, Universidad Autónoma de la Ciudad de Mexico, Mexico. May-Sept 2012.
- M.Sc. Zhen Wang, Hong Kong Baptist University. June-Sept 2012.
- M.Sc. Christian Sanabria, Cinvestav, Mexico City, Mexico. January 2012-June 2012.
- **Undergraduate/Graduate Students**
 - Master Degree work:
 - Ariadna Fosch, Mario Tovar, Laura Solanas, Miguel Baez, Francesca Priante, Alberto Aleta (with honors), Julia Poncela, Joaquín Sanz, Carlos Gracia Lazaro, Pablo Piedrahita, Luis Hueso.
 - Work leading to Graduation (Laurea):
 - Marta Buetas, Marta Alvarez, David Muñoz, Silvia Muñoz, Alfonso Yubero, Alicia Lou, Miguel Tarancón, Hector Garcia (with honors), Mauro Mobila, Alberto Aleta, Fernando Cid (with honors), Manuel Campillo, Luis Fernandez Lafuerza, Jesus Gomez-Gardeñes, Roberta Sinatra (Italy), Elio Profumo (Italy).
- **University of Zaragoza**
 - "Systems Biology", Course of the Master in Quantitative Biology. Winter of the Academic Years 2017-2018, 2018-2019, 2019-2020, 2020-2021.
 - "Complex Networks", Course of the Master in Physics. Spring of the Academic Years 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021.
 - "Computational Physics", Undergraduate Course. Spring-Summer of the Academic Years 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2017-2018, 2018-2019, 2019-2020, 2020-2021.
 - "Chaos and Complex Systems", Undergraduate Course. Spring of the years 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012.
 - "Complex Systems", Course at the Master and PhD Program in Physics. Fall 2007, 2008, 2009, 2010, 2011, 2012.
- **Theoretical Physics Lab, University of Cergy-Pontoise, France.**
 - "Structure and Dynamics of Complex Network", Master Course within the Ph.D. Program, 2011.
- **Department of Informatics and Automatics, University of Rome III, Italy.**
 - "Structure and Dynamics of Complex Network", Summer Course within the Ph.D. Program, 2008.
- **Advanced School of Catania (Scuola Superiore di Catania), Italy**
 - "Complex Networks", Undergraduate Course. Fall 2007.
- **Technological University of Havana, Havana, Cuba.**
 - "Atomic Physics", Undergraduate Course for Chemical Engineers. Yearlong course, 1996-1997.
 - "Electricity and Magnetism", Undergraduate Course for Chemical Engineers. Yearlong course, 1995-1996.
 - "Molecular Physics and Thermodynamics", Undergraduate Course for Chemical Engineers. Yearlong course, 1994-1995.
 - "Mechanics", Undergraduate Course for Chemical Engineers. Yearlong course, 1993-1994.