

Sandro Meloni

CONTACT INFORMATION

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CURRENT POSITION

Tenured Scientist at Spanish National Research Council (CSIC).
IFISC Institute for Cross-Disciplinary Physics and Complex Systems, University of the Balearic Islands (UIB) and the Spanish National Research Council (CSIC).

RESEARCH INTERESTS

Complex Systems, Networks Science, Nonlinear Dynamics
Epidemic Spreading and Diffusion Processes on Networks
Collective Phenomena in Social Systems
Evolutionary Game Theory
Data Science

RESEARCH EXPERIENCE

- Jan-Jul 2018. **Ramn y Cajal Fellow (tenure track)**, Department of Theoretical Physics, University of Zaragoza (Spain).
- 2014 – 2017. **Juan de la Cierva Fellow**, Institute for Biocomputation and Physics of Complex Systems and Department of Theoretical Physics, University of Zaragoza (Spain).
- 2011 – 2014. **Postdoctoral fellow**, Institute for Biocomputation and Physics of Complex Systems, University of Zaragoza (Spain).
- 2007 – 2011. **Ph.D. student**, Department of Informatics and Automation, University of Rome “Roma Tre” (Italy).

EDUCATION

2011 Ph.D. in Computer Science and Automation
Department of Informatics and Automation,
University of Rome “Roma Tre” (Italy).
Thesis Title: *Complex Technological Networks: Structure, Dynamics and Algorithms.*

2006 M.Sc. in Informatics Engineering (summa cum laude),
Department of Informatics and Automation,
University of Rome “Roma Tre” (Italy).

2004 B.Sc. in Informatics Engineering,
Department of Informatics and Automation,
University of Rome “Roma Tre” (Italy).

Selected Publications

10. Caroline Guerrisi, *et. al.*
Participatory Syndromic Surveillance of Influenza in Europe.
Journal of Infectious Diseases, 214(suppl 4) S386-S392 (2016).
9. Mattia Prosperi, Iain Buchan, Iuri Fanti, Sandro Meloni, Pietro Palladino and Vetle I. Torvik.
Kin of coauthorship in five decades of health science literature.
Proc. Natl. Acad. Sci. U.S.A. (PNAS), 113(32) 8957-8962 (2016).
8. Joaquín Sanz, Cheng-Yi Xia, Sandro Meloni and Yamir Moreno.
Dynamics of interacting diseases.
Physical Review X, 4(4) 041005 (2014).
7. Emanuele Cozzo, Raquel A. Baños, Sandro Meloni and Yamir Moreno.
Contact-based social contagion in multiplex networks.
Physical Review E, 88 050801(R) (2013).
6. Chiara Poletto, Sandro Meloni, Vittoria Colizza, Yamir Moreno and A. Vespignani.
Host mobility drives pathogen competition in spatially structured populations.
PLoS Computational Biology, 9(8) e1003169 (2013).
5. Sandro Meloni, Nicola Perra, Alex Arenas, Sergio Gómez, Yamir Moreno and A. Vespignani.
Modeling Human Mobility Responses to the Large-scale Spreading of Infectious Diseases.
Scientific Reports, 1 62 (2011).
4. Sergio Gómez, Alex Arenas, Javier Borge-Holthoefer, Sandro Meloni and Yamir Moreno.
Discrete-time Markov chain approach to contact-based disease spreading in complex networks.
Europhysics Letters 89, 38009 (2010).
3. Sandro Meloni, Alex Arenas and Yamir Moreno.
Traffic-driven epidemic spreading in finite-size scale-free networks.
Proc. Natl. Acad. Sci. U.S.A. (PNAS) 106, 16897 (2009).
2. Sandro Meloni, Arturo Buscarino, Luigi Fortuna, Mattia Frasca, Jesús Gómez-Gardeñes, Vito Latora and Yamir Moreno.
Effects of mobility in a population of prisoner's dilemma players.
Physical Review E 79, 067101 (2009).
1. Sandro Meloni, Jesús Gómez-Gardeñes, Vito Latora and Yamir Moreno.
Scaling Breakdown in Flow Fluctuations on Complex Networks.
Physical Review Letters, 100 208701 (2008).

Major invited talks & seminars

Title: Disease Spreading on Complex Networks.
Venue: CCS Warm-Up.
Type: Keynote speaker.
Place & Dates: Thessaloniki (Greece), 21-23 September 2018.

Title: Epidemic Spreading on Multiplex Networks.
Venue: MultiNets 2018 (NetSci2018 Satellite).
Type: Keynote Conference
Place & Dates: Paris (France), 11 June 2018.

Title: Adding realism to Evolutionary Game Theory.
Venue: Games on Networks: from Theory to Experiments (NetSci2018 Satellite).
Type: Keynote Conference
Place & Dates: Paris (France), 12 June 2018.

Title: Use and misuse of data from Online Social Networks.
Venue: WWCS2016 - Winter Workshop on Complex Systems 2016.
Type: Keynote speaker.
Place & Dates: Madrid (Spain), 25-29/01/2016.

Title: Spreading processes on networks.
Venue: 2nd Mediterranean School of Complex Networks.
Type: Lecturer.
Place & Dates: Salina (Italy), 03-08/09/2015.

Title: Spreading processes on networks.
Venue: 1st Mediterranean School of Complex Networks.
Type: Lecturer.
Place & Dates: Salina (Italy), 09-13/06/2014.

Title: Interacting epidemics on interconnected networks.
Venue: NetONets Satellite of NetSci2014 conference.
Type: Keynote speaker.
Place & Dates: Berkeley, CA (USA), 02-06/06/2014.

Title: Online Networks and the Diffusion of Protests.
Venue: Complexity in social systems: from data to models.
Type: Keynote speaker.
Place & Dates: Cergy-Pontoise (France), 27-28/06/2013.

Title: Dynamics of interacting diseases.
Venue: Inserm & Universite Pierre et Marie Curie.
Type: Invited seminar.
Place & Dates: Paris (France), 24/04/2013.

Ph.D., Master & Bachelor students

Ph.D. Students

- Felipe Cardoso. Expected to defend in 2020.
- Alberto Aleta Casas. Expected to defend in 2019.
- Alessio Vincenzo Cardillo. Highest marks, 07/2014.

Master Students

- Alberto Aleta Casas. Evaluation: 9.8/10. 07/2014.

Summer Internships

- Mario Tovar Calonge. July-August 2016
- Andrea Manrique Yus. July-August 2016
- Emanuel Cristian Boghiu. July-August 2016.

Teaching

Course name: Física Computacional.

Venue: University of Zaragoza. Bachelor degree in physics.

Academic year: 2015–2016.

Course name: Física Computacional.

Venue: University of Zaragoza. Bachelor degree in physics.

Academic year: 2014–2015.

Course name: Física Computacional.

Venue: University of Zaragoza. Bachelor degree in physics.

Academic year: 2013–2014.

PARTICIPATION IN RESEARCH PROJECTS

Name: IBSEN – Bridging the gap: from Individual Behaviour to the Socio-technical MaN

Funding entity: European Commission - H2020 FET-OPEN

Dates: from 01/09/2015 to 31/08/2018

Name: DOLFINS – Distributed Global Financial Systems for Society

Funding entity: European Commission - H2020 FET-OPEN

Dates: from 01/03/2015 to 28/02/2018

Name: MULTIPLEX – Foundational Research on MULTilevel comPLEX networks and systems

Funding entity: European Commission - FP7 FET-PROACTIVE

Dates: from 01/11/2012 to 31/10/2016

Name: PLEXMATH – Mathematical framework for multiplex networks

Funding entity: European Commission - FP7 FET-PROACTIVE

Dates: from 01/11/2012 to 31/10/2015

Name: REDES, BIOFISICA Y CIENCIA NO LINEAL

Funding entity: Spanish Ministry for Science and Innovation

Dates: from 03/12/2012 to 31/12/2014

Conferences Organization & Programme Committees

- Organizer (general Co-Chair) of NetSci 2015: International School and Conference on Complex Networks, held in Zaragoza (Spain), June 1–5, 2015. Notes: Netsci is the flagship conference on network science with more than 550 attendees.
- Organizer of Contagion '14: Modeling of Disease Contagion Processes, 3rd edition. Satellite of ECCS14: European Conference on Complex Systems, held in Lucca (Italy), September 25, 2014.
- Organizer of Contagion '13: Modeling of Disease Contagion Processes, 2nd edition. Satellite of ECCS13: European Conference on Complex Systems, held in Barcelona (Spain), September 18, 2013.

Member of the Programme Committee of more than 15 international conferences including: *NetSci2015*, *NetSci-X2015*, *NetSci2014*, *CCS16*, *CompleNet2016*, *CompleNet2015*, *ComplexNetworks 2016*.

Scientific Societies

- 2016 – 2018. Elected member of the council of the Complex Systems Society (CSS).
- 2016 –. Board member of the Network Science Society (NetSci).
- 2015 – 2021. Elected member of the steering committee of the Conference on Complex Systems (CCS).
- 2014 – 2016. Elected member of the council of the Complex Systems Society (CSS).

Service

Serving as a referee for more than 25 international journals including: *Nature Communications*, *Physical Review Letters*, *Physical Review E*, *EuroPhysics Letters*, *Scientific Reports*, *PLoS ONE*, *European Physics Journal Data Science*, *Network Science*, *Journal of Complex Networks*, *Information Sciences*, *Communication Networks*, *Journal of Computational Sciences*.

- 02/07/2012 – 31/07/2012 (1 month). Institute for Scientific Interchange (ISI), Turin (Italy).
- 27/04/2011 – 31/07/2011 (3 months). Institute for Scientific Interchange (ISI), Turin (Italy).
- 01/04/2009 – 30/09/2009 (6 months). Institute for Biocomputation and Physics of Complex Systems, University of Zaragoza (Spain).
- 16/01/2008 – 30/03/2008 (3 months). University of Catania, Catania (Italy).