Mauro Faccin
Curriculum Vitæ

Ceped
Université de Paris - Campus St Germain des Prés
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75006 Paris, France
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https://maurofaccin.github.io

Actual Position

2021 - today **CEPED and IRD**   Université de Paris, France
Interests/Research line
· Dynamical systems evolving on complex networks
· Mesoscopic structures and their influence on the dynamical system
· Applied data analysis for disease control
· Analysis of information dynamics in social networks
● **ARC2S at Unito**
visitor

Professional Experience

2021 - today **Université de Paris, (CEPED and IRD)**   Paris, France
PostDoc
2015 - 2020 **PostDoc**   Louvain la Neuve, Belgium
Université Catholique de Louvain (ICTEAM)
2011 - 2015 **ISI Fundation**   Torino, Italy
PostDoc
2006 - 2011 **Bifi Institute**   Zaragoza, Spain
PhD

Fellowships and Projects

2017 - today **Innoviris Iris-TB (D1.31402.007-F)**
2015 - 2017 **MOVE-IN Louvain Fellowship (with support of Marie Curie Actions)**

Membership

2018 - today **SICC - Italian Society for Chaos and Complexity**
2015 - today **Network Science Society**
Member
2014 - today **Complex Systems Society**
Member
2013 - today **Frontiers in Quantum Computing**
Review Editor

Committees

1 Dec 2020 **Complex Networks 2020**   Madrid, Spain
Program Committee
10 Dec 2019 **Complex Networks 2019**   Lisbon, Portugal
Program Committee
22 Feb 2019 **BeNet 2019**   Hasselt, Belgium
Program committee
11 Dec 2018 **Complex Networks 2018**   Cambridge, UK
Program Committee
29 Nov 2017 **Complex Networks 2017**   Lyon, France
Program Committee

15 Dec 2016	**BeNet 2016**	Louvain-la-Neuve, Belgium
	Organizing committee	
30 Nov 2016	**Complex Networks 2016**	Milan, Italy
	Program committee	
21 Sep 2016	**Coarse-graining of Complex Systems**	CCS2016, Amsterdam, Netherlands
	Organizing committee	
2 Jun 2014	**Quantum Frontiers for Network Science**	NetSci 2014, Berkeley, California
	Organizing committee	

REVIEWER

- Advances in Complex Systems
- Applied Network Science
- APS (Physical Review E)
- Journal of Complex Networks
- Journal of Statistical Mechanics
- Natural Computing
- PLOS ONE
- Science Advances
- Scientific Reports

TEACHING

2015-2020	**LINMA2111 Algorithms and Complexity**	Assistant Professor
	Université Catholique de Louvain	
2005	**Physics and Math at primary school**	Hetauda, Nepal
	NEST	
2004	**guide in Science Museum**	Padova, Italy
	Organizer: INFN	

EDUCATION

2020	**24CFU**	Univestità telematica Pegaso
2011	**PhD in Physics**	University of Zaragoza
	supervisor: Pierpaolo Bruscolini	
2007	**Master in Physics and Technology**	University of Zaragoza
	supervisor: Pierpaolo Bruscolini	
2005	**MSc in Physics**	University of Padova
	supervisor: Enzo Orlandini	

PUBLICATIONS

- State aggregations in Markov chains and block models of networks

  Phys. Rev. Lett., 127, 078301 (2021)

  M. Faccin, M.T. Schaub and j.-C. Delvenne
- Complex Networks from Classical to Quantum   Communications Physics 2-53 (2019)

  J. Biamonte, M. Faccin, M. De Domenico
- Outbreak of multidrug-resistant tuberculosis in South Africa undetected by WHO-endorsed commercial tests: an observational study

  The Lancet Infectious Diseases 2018

  Makhado, Matabane, Faccin, Pinçon, Jouet, Boutachkourt, Goeminne, Gaudin, Maphalala, Beckert, Niemann, Delvenne, Delmée, Razwiedani, Nchabeleng, Supply, de Jong, André
- Entrograms and coarse graining of dynamics on complex networks

  Journal of Complex Networks

  M. Faccin, M.T. Schaub, J-C. Delvenne

- **Chiral Quantum Walks**   Phys. Rev. A 93, 042302
  D. L. Lu, J. D. Biamonte, J. Li, H. Li, T. H. Johnson, V. Bergholm, M. Faccin, Z. Zimborás, R. Laflamme, J. Baugh, and S. Lloyd
- **Mapping the topography of a protein energy landscape**
  J. Am. Chem. Soc., 2015, 137 (46), pp 14610–14625
  R. D. Hutton, J. Wilkinson, M. Faccin, E. M. Sivertsson, A. Pelizzola, A. R. Lowe, P. Bruscolini, L. S. Itzhaki
- **Community Detection in Quantum Complex Networks**
  Phys. Rev. X 4 (4 2014), p. 041012
  M. Faccin, P. Migdał, T. H. Johnson, V. Bergholm, and J. D. Biamonte
- Degree Distribution in Quantum Walks on Complex Networks
  Phys. Rev. X 3 (4 2013), p. 041007
  M. Faccin, T. Johnson, J. Biamonte, S. Kais, and P. Migdał
- Quantum Transport Enhancement by Time-Reversal Symmetry Breaking
  Sci. Rep. 3 (2013). Ed. by NPG, p. 2361
  Z. Zimboras, M. Faccin, Z. Kadar, J. Whitfield, B. Lanyon, and J. Biamonte
- MS/MS Spectra Interpretation as a Statistical-Mechanics Problem
  Analytical Chemistry 85.10 (2013), pp. 4884–4892
  M. Faccin and P. Bruscolini
- Ground-state spin logic   Europhysics Letters 99.5 (2012), p. 57004
  J. D. Whitfield, M. Faccin, and J. D. Biamonte
- Analysis of the equilibrium and kinetics of the ankyrin repeat protein myotrophin
  The Journal of Chemical Physics 134.7, 075102 (2011), p. 075102
  M. Faccin, P. Bruscolini, and A. Pelizzola

CONFERENCES (ORAL CONTRIBUTIONS)

19 Oct 2021	State aggregation for dynamical systems: An information-theoretic approach	
	Math Dept, Oxford University, (UK – Online)	
	Network Seminar 2021	
7-9 Dec 2020	Using predictive models and risk assessment tools to find unreported TB cases	
	Washingthon DC, USA (online)	
	Global Digital Health Forum 2020	
20-24 Oct 2020	Data-driven TB active-case finding in South Kivu (DRC)	Paris, France (online)
	The Union 2020	
10-12 Dec 2019	Auto-information in non-Markovian diffusion systems	Lisbon, Portugal
	Complex Networks 2019	
22 Feb. 2019	Variable aggregation for dynamical systems on networks	Hasselt, Belgium
	Benet 2019	
23-28 Sept. 2018	A dynamical approach to block structure analysis	Thessaloniki, Greece
	CCS 2018	
11-15 Jun 2018	Dynamical Markov Modules	Paris, France
	Netsci 2018	
21-24 Mar 2017	Community detection in networks with non-Markovian dynamics	Dubrovnik, Croatia
	CompleNet 2017	
30 Nov-2 Dec 2016	Behind Communities: Dynamics Define Modules	Milan, Italy
	ComplexNetworks 2016	
19-22 Sep 2016	Beyond Communities: Dynamical Markov Modules	Amsterdam, Netherlands
	CCS 2016	
May 30-June 3 2016	Mesoscopic Structure And Diffusion Process Memory	Seoul, Korea
	NetSci 2016	
10-15 Jan 2015	Mesoscopic Structures and Diffusion Process Memory	Wrocław, Poland
	NetSci-X 2016	
2-6 Jun 2015	Structural controllability of EEG temporal causal networks	Zaragoza, Spain
	NetSci 2015	
22-26 Sep 2014	Quantum Approaches to Community Detection	Lucca, Italy
	ECCS 2014	
12-14 Mar 2014	Community detection on quantum systems	Bologna, Italy
	CompleNet 2014	
22-24 Jan 2014	Community Detection on Quantum Systems	Zaragoza, Spain
	BIFI2014	
24-26 May 2013	Degree distribution in quantum complex networks	Waterloo, Canada
	IQC workshop on quantum computation and complex networks	

6-8 Nov 2012	**Ground state spin logic**	Torino, Italy
	Tensor Network States and Algebraic Geometry Workshop	
2-4 Feb 2011	**Equilibrium and kinetics of the ankyrin repeat protein Myotrophin through a simple statiscical mechanical model**	Zaragoza, Spain
	V BIFI National Conference	
5-7 Feb 2009	**Bayesian Characterization of Protein Tandem Mass Spectra**	Zaragoza, Spain
	IV BIFI National Conference	
8-9 May 2008	**Noise description in MSMS mass spectrometry, looking for a de novo sequencing algorithm**	San Sebastian, Spain
	VI Jornadas Aragonesas de Estabilidad y Plegamiento de Proteínas	

CONFERENCES (POSTER CONTRIBUTIONS)

17-25 Sept 2020	State aggregation in non-Markovian systems by auto-information maximization	Rome, Italy
	Netsci 2020	
17-25 Sept 2020	The variability of network structures inferred from time series data	Rome, Italy
	Netsci 2020	
10-12 Dec 2019	The variability of network structures inferred from time series data	Lisbon, Portugal
	Complex Networks 2019	
1-3 July 2019	**Variable aggregation on (broadcasting) networks**	Trento, Italy
	CCS/Italy 2019	
23-25 Mar 2016	**Memory and Mesoscopic Structures in Diffusion Processes**	Dijon, France
	Complenet 2016	
7-10 Jul 2010	**Folding Pathways Characterization for Ankyrin Repeat Protein Myotrophin**	Zaragoza, Spain
	IV Spanish Portuguese Biophysical Congress	
2-6 Jun 2008	**Statistical characterization of fragment ions in MSMS mass spectrometry**	Sitges, Spain
	XXI Sitges Conference on Statistical Mechanics: Statistical Mechanics of Molecular Biophysics	

COMPUTER SKILLS

Coding	**Python, C, C++, Matlab, Fortran**
Shell	**Bash, iPython/Jupyter**
Versioning	**GIT, Subversion, Mercurial**
Plotting	**Gnuplot, Matplotlib, PGFPlots(latex)**
Typesetting	**Latex, LibreOffice, MSOffice, Markdown**
Imaging	**Gimp (Raster), Inkscape (Vectorial), Rawtherapee (RAW)**
Web	**HTML5, CSS/SCSS, static site generators, Wordpress**

LANGUAGES

Italian	**Mother tongue**
English	**Fluent**
Spanish	**Fluent**
French	**Fair**

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