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

PROFESSIONAL EXPERIENCE

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

FELLOWSHIPS AND PROJECTS

2021 - today **TRACTRUST (ANR-20-COVI-0102)**
2017 - 2021 **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 2021 **Complex Networks 2021** Madrid, Spain
Program Committee
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

- **Measuring dynamical systems on directed hypergraphs** Phys Rev E, 106 (034306), 2022
  M. Faccin
- **Assessing the influence of French vaccine critics during the two first years of the COVID-19 pandemic** PLOS ONE, 17(8): e0271157
  M. Faccin, F. Gargiulo, L. Atlani-Duault, J.K. Ward
- **Data-driven identification of communities with high levels of tuberculosis infection in the Democratic Republic of Congo.** Sci Rep 12, 3912 (2022)
  M. Faccin, O. Rusumba, A. Ushindi, M. Riziki, T. Habiragi, F. Boutachkourt, E. André
- **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
  · Figure selected for the journal cover
- **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)

30 May 2022	Outreach of vaccine-critic content on French-speaking Twitter Complenet 2022	Online
2 Dec 2021	Autoinformation state aggregation Complex Networks 2021	Madrid (Spain)
30 Nov 2021	Vaccine-critical discourse on French-speaking Twitter and its outreach Complex Networks 2021 · Best lightning talk award	Madrid (Spain)
19 Oct 2021	State aggregation for dynamical systems: An information-theoretic approach Network Seminar 2021	Math Dept, Oxford University, (UK – Online)
7-9 Dec 2020	Using predictive models and risk assessment tools to find unreported TB cases Global Digital Health Forum 2020	Washingthon DC, USA (online)
20-24 Oct 2020	Data-driven TB active-case finding in South Kivu (DRC) The Union 2020	Paris, France (online)
10-12 Dec 2019	Auto-information in non-Markovian diffusion systems Complex Networks 2019	Lisbon, Portugal
22 Feb. 2019	Variable aggregation for dynamical systems on networks Benet 2019	Hasselt, Belgium
23-28 Sept. 2018	A dynamical approach to block structure analysis CCS 2018	Thessaloniki, Greece
11-15 Jun 2018	Dynamical Markov Modules Netsci 2018	Paris, France
21-24 Mar 2017	Community detection in networks with non-Markovian dynamics CompleNet 2017	Dubrovnik, Croatia

30 Nov-2 Dec 2016	**Behind Communities: Dynamics Define Modules** ComplexNetworks 2016	Milan, Italy
19-22 Sep 2016	**Beyond Communities: Dynamical Markov Modules** CCS 2016	Amsterdam, Netherlands
May 30-June 3 2016	**Mesoscopic Structure And Diffusion Process Memory** NetSci 2016	Seoul, Korea
10-15 Jan 2015	**Mesoscopic Structures and Diffusion Process Memory** NetSci-X 2016	Wrocław, Poland
2-6 Jun 2015	**Structural controllability of EEG temporal causal networks** NetSci 2015	Zaragoza, Spain
22-26 Sep 2014	**Quantum Approaches to Community Detection** ECCS 2014	Lucca, Italy
12-14 Mar 2014	**Community detection on quantum systems** CompleNet 2014	Bologna, Italy
22-24 Jan 2014	**Community Detection on Quantum Systems** BIFI2014	Zaragoza, Spain
24-26 May 2013	**Degree distribution in quantum complex networks** IQC workshop on quantum computation and complex networks	Waterloo, Canada
6-8 Nov 2012	**Ground state spin logic** Tensor Network States and Algebraic Geometry Workshop	Torino, Italy
2-4 Feb 2011	**Equilibrium and kinetics of the ankyrin repeat protein Myotrophin through a simple statiscical mechanical model** V BIFI National Conference	Zaragoza, Spain
5-7 Feb 2009	**Bayesian Characterization of Protein Tandem Mass Spectra** IV BIFI National Conference	Zaragoza, Spain
8-9 May 2008	**Noise description in MSMS mass spectrometry, looking for a de novo sequencing algorithm** VI Jornadas Aragonesas de Estabilidad y Plegamiento de Proteínas	San Sebastian, Spain

Conferences (Poster Contributions)

1 Dec 2021	**Directed hyper-graphs and dynamical systems** Complex Networks 2021	Madrid (Spain)
17-25 Sept 2020	**State aggregation in non-Markovian systems by auto-information maximization** Netsci 2020	Rome, Italy
17-25 Sept 2020	**The variability of network structures inferred from time series data** Netsci 2020	Rome, Italy
10-12 Dec 2019	**The variability of network structures inferred from time series data** Complex Networks 2019	Lisbon, Portugal
1-3 July 2019	**Variable aggregation on (broadcasting) networks** CCS/Italy 2019	Trento, Italy
23-25 Mar 2016	**Memory and Mesoscopic Structures in Diffusion Processes** Complenet 2016	Dijon, France
7-10 Jul 2010	**Folding Pathways Characterization for Ankyrin Repeat Protein Myotrophin** IV Spanish Portuguese Biophysical Congress	Zaragoza, Spain
2-6 Jun 2008	**Statistical characterization of fragment ions in MSMS mass spectrometry** XXI Sitges Conference on Statistical Mechanics: Statistical Mechanics of Molecular Biophysics	Sitges, Spain

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

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

Mauro Faccin