

MAURO FACCIN

Curriculum Vitæ

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ACTUAL POSITION

- **BigData Group and ICTEAM Institute at U.C. Louvain**
Interests/Research line
 - Dynamical systems evolving on complex networks
 - Markovian and non-Markovian dynamics
 - Mesoscopic scale structures and their influence on the dynamical system
 - Applied data analysis for disease control
- **ARC2S at Unito**
visitor

PROFESSIONAL EXPERIENCE

2015 - today	PostDoc Université Catholique de Louvain (ICTEAM)	Louvain la Neuve, Belgium
2011 - 2015	PostDoc ISI Foundation	Torino, Italy
2006 - 2011	PhD Bifi Institute	Zaragoza, Spain

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 Program Committee	Madrid, Spain
10 Dec 2019	Complex Networks 2019 Program Committee	Lisbon, Portugal
22 Feb 2019	BeNet 2019 Program committee	Hasselt, Belgium
11 Dec 2018	Complex Networks 2018 Program Committee	Cambridge, UK
29 Nov 2017	Complex Networks 2017 Program Committee	Lyon, France
15 Dec 2016	BeNet 2016 Organizing committee	Louvain-la-Neuve, Belgium

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

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 Université Catholique de Louvain	Assistant Professor
2005	Physics and Math at primary school NEST	Hetauda, Nepal
2004	guide in Science Museum Organizer: INFN	Padova, Italy

EDUCATION

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

PUBLICATIONS

- **State aggregations in Markov chains and block models of networks** ArXiv
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)

7-9 Dec 2020	Using predictive models and risk assessment tools to find unreported TB cases	Washington 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 statistical 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

Mauro Faccin