

# MAURO FACCIN

Curriculum Vitæ

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Belgium  
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<https://maurofaccin.github.io>

## ACTUAL POSITION

- **BigData Group and ICTEAM Institute at U.C. Louvain**  
Interests/Research line
  - Dynamics on and of complex networks
  - Mutual influence of topology and kinetics
  - Markovian and non-Markovian dynamics
  - Community and block detection

## PROFESSIONAL EXPERIENCE

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

## FELLOWSHIPS

2015 MOVE-IN Louvain Fellowship (with support of Marie Curie Actions)

## MEMBERSHIP

2015 - today	<b>Network Science Society</b> Member
2014 - today	<b>Complex Systems Society</b> Member
2013 - today	<b>Frontiers in Quantum Computing</b> Review Editor

## COMMITTEES

2 Jun 2014	<b>Quantum Frontiers for Network Science</b> Organizing committee	NetSci 2014, Berkeley, California
21 Sep 2016	<b>Coarse-graining of Complex Systems</b> Organizing committee	CCS2016, Amsterdam, Netherlands
30 Nov 2016	<b>Complex Networks 2016</b> Program committee	Milan, Italy
15 Dec 2016	<b>BeNet 2016</b> Organizing committee	Louvain-la-Neuve, Belgium
29 Nov 2017	<b>Complex Networks 2017</b> Program Committee	Lyon, France
11 Dec 2018	<b>Complex Networks 2018</b> Program Committee	Cambridge, UK
22 Feb 2019	<b>BeNet 2019</b> Program committee	Hasselt, Belgium

## REVIEWER

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

## TEACHING

2015-2018	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

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

- **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, Boutachkout, 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
- **Complex Networks: from Classical to Quantum – preprint** arXiv:1702.08459  
J. Biamonte, M. Faccin, M. De Domenico
- **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)

- |                    |                                                                                                                        |                        |
|--------------------|------------------------------------------------------------------------------------------------------------------------|------------------------|
| 22 Feb. 2019       | <b>Variable aggregation for dynamical systems on networks</b>                                                          | Hasselt, Belgium       |
|                    | Benet 2019                                                                                                             |                        |
| 23-28 Sept. 2018   | <b>A dynamical approach to block structure analysis</b>                                                                | Thessaloniki, Greece   |
|                    | CCS 2018                                                                                                               |                        |
| 11-15 Jun 2018     | <b>Dynamical Markov Modules</b>                                                                                        | Paris, France          |
|                    | Netsci 2018                                                                                                            |                        |
| 21-24 Mar 2017     | <b>Community detection in networks with non-Markovian dynamics</b>                                                     | Dubrovnik, Croatia     |
|                    | CompleNet 2017                                                                                                         |                        |
| 30 Nov-2 Dec 2016  | <b>Behind Communities: Dynamics Define Modules</b>                                                                     | Milan, Italy           |
|                    | ComplexNetworks 2016                                                                                                   |                        |
| 19-22 Sep 2016     | <b>Beyond Communities: Dynamical Markov Modules</b>                                                                    | Amsterdam, Netherlands |
|                    | CCS 2016                                                                                                               |                        |
| May 30-June 3 2016 | <b>Mesoscopic Structure And Diffusion Process Memory</b>                                                               | Seoul, Korea           |
|                    | NetSci 2016                                                                                                            |                        |
| 10-15 Jan 2015     | <b>Mesoscopic Structures and Diffusion Process Memory</b>                                                              | Wrocław, Poland        |
|                    | NetSci-X 2016                                                                                                          |                        |
| 2-6 Jun 2015       | <b>Structural controllability of EEG temporal causal networks</b>                                                      | Zaragoza, Spain        |
|                    | NetSci 2015                                                                                                            |                        |
| 22-26 Sep 2014     | <b>Quantum Approaches to Community Detection</b>                                                                       | Lucca, Italy           |
|                    | ECCS 2014                                                                                                              |                        |
| 12-14 Mar 2014     | <b>Community detection on quantum systems</b>                                                                          | Bologna, Italy         |
|                    | CompleNet 2014                                                                                                         |                        |
| 22-24 Jan 2014     | <b>Community Detection on Quantum Systems</b>                                                                          | Zaragoza, Spain        |
|                    | BIFI2014                                                                                                               |                        |
| 24-26 May 2013     | <b>Degree distribution in quantum complex networks</b>                                                                 | Waterloo, Canada       |
|                    | IQC workshop on quantum computation and complex networks                                                               |                        |
| 6-8 Nov 2012       | <b>Ground state spin logic</b>                                                                                         | Torino, Italy          |
|                    | Tensor Network States and Algebraic Geometry Workshop                                                                  |                        |
| 2-4 Feb 2011       | <b>Equilibrium and kinetics of the ankyrin repeat protein Myotrophin through a simple statistical mechanical model</b> | Zaragoza, Spain        |
|                    | V BIFI National Conference                                                                                             |                        |
| 5-7 Feb 2009       | <b>Bayesian Characterization of Protein Tandem Mass Spectra</b>                                                        | Zaragoza, Spain        |
|                    | IV BIFI National Conference                                                                                            |                        |
| 8-9 May 2008       | <b>Noise description in MSMS mass spectrometry, looking for a de novo sequencing algorithm</b>                         | San Sebastian, Spain   |
|                    | VI Jornadas Aragonesas de Estabilidad y Plegamiento de Proteínas                                                       |                        |

## CONFERENCES (POSTER CONTRIBUTIONS)

- |                |                                                                                               |                 |
|----------------|-----------------------------------------------------------------------------------------------|-----------------|
| 23-25 Mar 2016 | <b>Memory and Mesoscopic Structures in Diffusion Processes</b>                                | Dijon, France   |
|                | CompleNet 2016                                                                                |                 |
| 7-10 Jul 2010  | <b>Folding Pathways Characterization for Ankyrin Repeat Protein Myotrophin</b>                | Zaragoza, Spain |
|                | IV Spanish Portuguese Biophysical Congress                                                    |                 |
| 2-6 Jun 2008   | <b>Statistical characterization of fragment ions in MSMS mass spectrometry</b>                | 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