

MAURO FACCIN

Curriculum Vitæ

Euler Building
4, Avenue Georges Lemaître
B-1348 Louvain-la-Neuve
Belgium
mauro.faccin@uclouvain.be
<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 | 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

- 2015 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

| | | |
|-------------|--|-----------------------------------|
| 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

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|-----------|---|---------------------|
| 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 | 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)

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|----------------|---|-----------------|
| 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

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

Mauro Faccin