TIAGO DE PAULA PEIXOTO

University Professor

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EMPLOYMENT

Full Professor since 2024
IT:U Interdisciplinary Transformation University, Austria

Associate Professor 2019-2024
Department of Network and Data Science, Central European University, Austria

Assistant Professor (Lecturer) 2016-2019
Department of Mathematical Sciences, University of Bath, UK

External Researcher 2015-2020
ISI Foundation, Turin, Italy

Post-doc Researcher 2011-2016
Universität Bremen, Germany

Post-doc Researcher 2008-2011
Technische Universität Darmstadt, Germany

EDUCATION AND QUALIFICATIONS

Habilitation in Theoretical Physics 2017
Universität Bremen, Germany

Ph.D. in Physics 2008
Universidade de São Paulo, Brazil

B.Sc. in Physics 2004
Universidade de São Paulo, Brazil

PRIZES AND HONORS

Erdős–Rényi Prize in Network Science (Network Science Society)

> *"For groundbreaking contributions to the statistical analysis and visualization of networks, including efficient and principled inference algorithms based on the stochastic block model, and compression and prediction of richly annotated or hierarchical structures."* 2019

Best presentation award (NetSci X, Wrocław, Poland) 2016

6th recipient of the Zachary Karate Club Club Prize in Network Science 2015

Alexander von Humboldt Foundation Fellowship 2008

RESEARCH AREAS

Complex Systems and Network Science (methods, theory, and applications), Statistical Physics, Bayesian Statistics, Computational Statistics, Machine Learning

FUNDED GRANTS

WWTF	"MOMA — Multiscale network modeling of migration flows in Austria"	Lead PI and coordinator, w. Márton Karsai and Mathias Czaika	EUR 650,000	2024-2028
Australian Research Council	"Learning the meso-scale organization of complex networks"	Co-PI w/ Eduardo Altmann, Tristram Alexander, Olga Boichak	AUD 503,877	2024-2028
GW4	"Recurrence analysis for the characterisation and classification of epileptic patients"	co-PI, w. N. Masuda, L. Livi, J. Zhang	GBP 35,000	2019

EARLY CAREER GRANTS

Post-doc research grant, project "Large-scale Properties in Dynamic Network Systems" under the program "Independent projects for post-docs," Central Research Development Fund, University of Bremen, ca. € 330,000 (PI) 2012-2016

Alexander von Humboldt Foundation Fellowship, ca. € 100,000 (PI) 2008

FAPESP PhD scholarship ("Direct to PhD" program) 2004-2008

FAPESP undergraduate scholarship ("Iniciação Científica") 2000-2004

ACADEMIC SERVICES

Academic editor for Journal of Complex Networks, PLOS ONE.

Program commitee member for NetSci (2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024), CCS (2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024), WWW, SocInfo2017, Statphys26, SIAM NS (2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024), COMPLENET (2018, 2019, 2020, 2021, 2022, 2023, 2024).

Served as referee for Science, PNAS, Journal of Machine Learning Research, ICML, NeurIPS, WWW, Nature Communications, Science Advances, SIAM Review, Physical Review Letters, Physical Review X, Physical Review E, New Journal of Physics, Journal of Complex Networks, Journal of Statistical Mechanics, Applied Network Science, Network Science, EPJ Data Science, Nature Scientific Reports, PLOS ONE, Communications in Statistics, Journal of Applied Statistics, Statistica Neerlandica, IEEE Computational Intelligence Magazine, IEEE Transactions on Network Science and Engineering, IEEE Transactions on Cybernetics-Review, IEEE/ACM Transactions on Computational Biology and Bioinformatics, BMC Bioinformatics, Journal of Theoretical Biology.

Reviewed grant proposals for European Research Council (ERC), Deutsche Forschungsgemeinschaft (DFG), Swiss National Science Foundation, Austrian Science Fund (FWF), Einstein Foundation, Le Fonds de la Recherche Scientifique (FNRS), French National Research Agency (ANR), Wiener Wissenschafts-, Forschungs- und Technologiefonds (WWFT), FONDECYT Chile.

	Role	Name	Institution	Date
Thesis defences:	Chair	Apratim De	Central European Univeristy	2024
	Examiner	John Fitzgerald	University of Oxford	2023
	Examiner	Louis Duvivier	INSA Lyon	2021
	Rapporteur	Lorenzo Dall'amico	Université Grenoble Alpes	2021
	Examiner	Oleg Senkevich	Northumbria University	2021
	Chair	András Borsos	Central European Univeristy	2021
	Chair	Dávid Deritei	Central European Univeristy	2020
	Examiner	Owen T. Courtney	Queen Mary University	2019
	Examiner	Edmund Barter	University of Bristol	2017
	Examiner	Sebastian Krause	Universität Bremen	2013

INVITED TALKS AT CONFERENCES AND WORKSHOPS

"Bernoulli-IMS 11th World Congress in Probability and Statistics"	Bochum	August 2024
"16th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2023)"	Berlin	December 2023
Keynote speaker, "Conference on Complex Systems," CCS 2023	Salvador	October 2023
Workshop, "Discrete Random Structures", EPFL	Lausanne	August 2023
Keynote speaker, "TopoNets 2023: Between higher-order mechanisms and phenomen," NetSci 2023 Satellite	Vienna	July 2023
Conference, "16th International Conference on Computational and Financial Econometrics", King's College London	London	December 2022
Symposium "The Complex Network Approach to Data Science", ETH	Zürich	November 2022
Workshop, "Bayesian Methods for the Social Sciences," Institut Henri Poincaré	Paris	October 2022
Keynote speaker, "4th IMA Conference on The Mathematical Challenges of Big Data," Institute of Mathematics, University of Oxford	Oxford	September 2022
Workshop, "Mathematics of Large Networks," Erdős center, Rényi Institute	Budapest	May 2022
Workshop, "Data-based diagnosis of networked dynamical systems," CCS 2021 Satellite	Lyon	Oct. 2021
Conference, "17th Applied Statistics"	Ljubljana	Sep. 2021
Keynote speaker, "Communities in Networks," Networks 2021 Satellite	Washington	Jul. 2021
Symposium, "Graph Exploitation Symposium"	Boston	May 2021
Keynote speaker, "11th Conference on Complex Networks (CompleNet)" (cancelled due to COVID-19)	Exeter	Mar. 2020
Symposium, "Graph Exploitation Symposium" (cancelled due to COVID-19)	Boston	Oct. 2020
"Fifth Workshop on Critical and Collective Effects in Graphs and Networks" (cancelled due to COVID-19)	Boston	May 2020
Conference, "Barcelona Mathematical Days" (cancelled due to COVID-19)	Barcelona	Oct. 2020
Workshop, "Statistics of Network Analysis", Alan Turing Institute (cancelled due to COVID-19)	London	May. 2020
Conference, "SIAM Conference on Uncertainty Quantification" (cancelled due to COVID-19)	Munich	Mar. 2020

Conference, "The International School and Conference on Network Science (NetSci 2019)"	Burlington	May 2019
Symposion, "NetSciEd 2019: The NetSci Satellite Symposium on Network Science and Education"	Burlington	May 2019
Workshop, "Physics, Inference and Learning," Institute of Theoretical Physics, Chinese Academy of Sciences	Beijing	Oct. 2018
Keynote speaker, "European Cooperation for Statistics of Network Data Science (COSTNET18) conference"	Warsaw	Sep. 2018
Conference, "Applied Statistics 2018"	Ribno	Sep. 2018
Workshop, "Critical and Collective Effects in Graphs and Networks 2018"	Eindhoven	Jul. 2018
"SIAM Conference on Applied Mathematics Education"	Portland	Jul. 2018
Workshop, "Statistical Network Science," Brunel University	Uxbridge	Jun. 2018
Workshop "Next Generation Network Analytics," London Statistical Society	London	Jan. 2018
Conference, "Statistical Network Science"	Mallorca	Oct. 2017
Workshop, "Community detection and network reconstruction"	Eindhoven	Sep. 2017
Workshop, "Critical and collective effects in graphs and networks 2017," Independent University of Russia	Moscow	May 2017
Workshop, "Maths and the City," University of Bristol	Bristol	Jan. 2017
Workshop, "Evolving Networks and Collective Behaviour," Tsinghua Sanya International Mathematics Forum	Sanya	Jan. 2017
Keynote speaker, The PIIK: 1st Symposium on Network Science, University of Zürich	Zürich	Nov. 2016
Workshop, "Dynamics on and of Networks," CCS 2016	Amsterdam	Sep. 2016
Workshop, "Graph limits and statistics," Isaac Newton Institute	Cambridge	July 2016
Workshop, "Higher-Order Models in Network Science,", NetSci 2016	Seul	June 2016
Workshop, "Inference in Complex Networks", 2016 APS March Meeting	Baltimore	Mar 2016
Conference, NetSci X 2016	Wroclaw	Jan. 2016
ICMS workshop "Dynamical networks and network dynamics"	Edinburgh	Jan. 2016
Workshop, "Inference on Networks: Algorithms, Phase Transitions, New Models and New Data," Santa Fe Institute	Santa Fe	Dec. 2015
ISNPS Meeting "Biosciences, Medicine, and novel Non-Parametric Methods"	Graz	Jul. 2015
Workshop, "Higher-Order Models in Network Science," NetSci 2015	Zaragoza	Jun. 2015
Workshop, "NetSci Backstage," NetSci 2015	Zaragoza	Jun. 2015
Workshop, "Statistical Inference for Network Models," NetSci 2014	Berkeley	Jun. 2014
Mini-symposium "Evolution of cooperation in social-ecological systems", The Leibniz Center for Tropical Marine Ecology	Bremen	Sep. 2011

INVITED TALKS AT SEMINARS

Institutskolloquium, Instityte für Physik und Astronomie, Universität Potsdam	Potdsdam	Dec. 2023
Institutskolloquium, Institut für Statistik, Ludwig-Maximilians-Universität München	Munich	Jun. 2023
Colloquium, Complexity Science Hub	Vienna	May 2023
Webinar, ICTP-SAIFR Complex Systems & Statistical Mechanics Seminars, IFT-UNESP	São Paulo	Apr. 2022
Webinar, Center for Research and Interdisciplinarity, Université de Paris	Paris	Dec. 2020
Webinar, Asian Institute of Management	Manila	Oct. 2020
Webinar, ANET Lab Seminar Series	Budapest	May 2020
Seminar, Center for the Study of Complex Systems (CSCS), University of Michigan	Michigan	Nov. 2019
Seminar, Department of Computer Science, University of Exeter	Exeter	Dec. 2018
TADS Seminar, Alan Turing Institute	London	Nov. 2018
Seminar, National Institute of Advanced Industrial Science and Technology	Tokyo	Nov. 2018
Seminar, Department of Mathematics, University of Brunel	Uxbridge	Oct. 2018
Seminar, Institute of Theoretical Physics, Chinese Academy of Sciences	Beijing	Jan. 2018
Seminar, Stochastic Processes Group, University College London	London	July 2017
Seminar, Department of Engineering Mathematics, University of Bristol	Bristol	Oct. 2016
Seminar, Institut für Festkörperphysik, Universität Darmstadt	Darmstadt	Feb. 2016
Seminar, C.N.R.S. Centre de Physique Théorique	Marseille	July. 2015
Institute Colloquium, Department of Computer Science, Aalto University	Helsinki	May. 2015
MAGNET Seminar, French National Institute for Computer Science and Applied Mathematics (INRIA)	Lille	Apr. 2015
Institute Seminar, ISI Foundation	Turin	Mar. 2015
Seminar, Department of Physics, Loránd Eötvös University	Budapest	Sep. 2014
Seminar, Department of Computer Science, University of Colorado	Boulder	May. 2014
Seminar, Santa Fe Institute	Santa Fe	May. 2014
Seminar, Department of Physics, Umeå University	Umeå	Apr. 2014
Seminar, Lab. de Physique Statistique, Ecole Normale Superieure	Paris	Jan. 2014
Seminar, Max Planck Institute for the Physics of Complex Systems	Dresden	Dez. 2013
Seminar, ICBM, Carl von Ossietzky Universität Oldenburg	Oldenburg	Nov. 2013
Seminar, Honda Research Institute Europe	Offenbach	Nov. 2012
Seminar, Institut für Festkörperphysik, Universität Darmstadt	Darmstadt	Jun. 2012
Colloquium, Institute for Complex Systems and Mathematical Biology, University of Aberdeen	Aberdeen	Sep. 2010
Seminar, Complexity Science Group, University of Calgary	Calgary	Sep. 2009

INVITED LECTURES AT INTERNATIONAL SCHOOLS

Lecture at "Mediterranean School of Complex Networks 2024"	Grado	July 2024
Tutorial at conference "Complex Networks 2023"	French Riviera	Nov. 2023
Lecture at "Summer School on Data Science"	Split	Nov. 2020
Lecture at "DPG Spring Meeting of the Condensed Matter Section (SKM), Physics of Socio-economic Systems"	Regensburg	Mar. 2019
Lecture at "Early Career Training Event, European Cooperation for Statistics of Network Data Science (COSTNET)"	Munich	Feb. 2019

Lecture at "Tehran School on Theory and Applications of Complex Networks"	Tehran	Sep. 2018
Lecture at"Mediterranean School of Complex Networks 2017"	Salina	Sep. 2017
Lecture at Summer School "Probabilistic and statistical methods for networks"	Berlin	Aug. 2017
Lecture at "Mediterranean School of Complex Networks 2016"	Salina	Sep. 2016
Lecture at summer school "Complex networks: theory, methods and applications," Lake Como School of Advanced Studies	Como	May 2016

CONFERENCE AND WORKSHOP ORGANIZATION

Symposium, "Statistical Inference for Network Models 2024," (co-organized w. Avanti Athreya, Caterina de Bacco, Alec Kirkley, Robert Lunde)	Québec	2024
Symposium, "Statistical Inference for Network Models 2023," (co-organized w. Avanti Athreya, Caterina de Bacco, Tatsuro Kawamoto, Jean-Gabriel Young)	Vienna	2023
Virtual symposium, "Statistical Inference for Network Models 2022," (co-organized w. Avanti Athreya, Abigail Jacobs, Tatsuro Kawamoto, Jean-Gabriel Young)	Shanghai	2022
Virtual symposium, "Statistical Inference for Network Models 2021," (co-organized w. Bailey Fosdick, Jean-Gabriel Young, Austin Benson, and Abigail Jacobs)	Washington	2021
Virtual symposium, "Statistical Inference for Network Models 2020," (co-organized w. Tina Eliassi-Rad, Bailey Fosdick, Dan Larremore, and Aaron Clauset)	Rome	2020
Workshop "Physics challenges for Machine Learning and Network Science", (co-organized w. Ginestra Bianconi), Queen Mary Universty of London	London	2019
"SIAM Workshop on Network Science (NS18)," (Co-chair w. Johan Ugander)	Portland	2018

RESEARCH SUPERVISION AND MENTORSHIP

Post-doc researchers: Martina Contisciani (since March 2024), Bukyoung Jhun (since September 2023).
PhD students: Sebastian Morel-Balbi (March 2018 - August 2022), Lizhi Zhang (July 2018 - August 2022), Felipe Vaca (since January 2020), Sina Sajjadi (since January 2021), Sebastian Kusch (since September 2022), Thomas Robiglio (since September 2023).
MSc students: Silvia Guerrini (since 2023), Nicola Zomer (since 2023), Sam Hawker (2017), Philipp C. Böttcher (2015), Christoph Schmal (2010).
BSc students: Tobias Punke (2017), Lukas Müller (2015), Eduard Kuhn (2015), Philipp Gersdorf (2011), Oliver Richters (2010).

PRESS COVERAGE

TechXplore, "A new complex network-based approach to topic modeling."	2018
Physics, "Synopsis: Robust Networks", American Physical Society	2012
Phys.org, "High gas prices may be explained by self-organized cartel behavior."	2012
Physics Arxiv Blog, "Cartels Are an Emergent Phenomenon, Say Complexity Theorists," MIT Technology Review	2012

Juraforum.de, "Bremer Uni-Studie: Flächendeckend höhere Benzinpreise deuten nicht gleich auf Preisabsprachen hin." 2012

Kreiszeitung.de, "Benzinpreis: Kein Hinweis auf Absprache." 2012

TEACHING

At CEU:

2024/24 Fall	"Introduction to Bayesian Statistics" (BSc)
2023/24 Winter	"Network inference and reconstruction" (MSc/PhD)
2022/23 Winter	"Network inference and reconstruction" (MSc/PhD)
2021/22 Winter	"Network inference and reconstruction" (MSc/PhD)
2020/21 Winter	"Network inference and reconstruction" (MSc/PhD)
2023/24 Winter	"Data and network visualization" (MSc/PhD)
2022/23 Winter	"Data and network visualization" (MSc/PhD)
2021/22 Winter	"Data and network visualization" (MSc/PhD)
2020/21 Winter	"Data and network visualization" (MSc/PhD)
2019/20 Winter	"Data and network visualization" (MSc/PhD)
2021/22 Winter	"Quantitative methods in social sciences" (BSc)
2019/20 Fall	"Scientific Python" (MSc/PhD)
2020/21 Fall	"Scientific Python" (MSc/PhD)

At Bath:

2018/19 Winter	"Graphs and networks: theory and applications" (BSc)
2017/18 Winter	"Graphs and networks: theory and applications" (BSc)
2018/19 Winter	"Large-scale and Bayesian methods" (PhD)
2017/18 Winter	"Large-scale and Bayesian methods" (PhD)
2017/18 Winter	'Process dynamics, modelling and control" (BSc)
2016/17 Winter	'Process dynamics, modelling and control" (BSc)

At Bremen:

2015/2016 Summer	"Physik komplexer Netzwerke" (BSc/MSc)
2014/2015 Summer	"Physik komplexer Netzwerke" (BSc/MSc)
2013/2014 Summer	"Physik komplexer Netzwerke" (BSc/MSc)
2012/2013 Summer	"Physik komplexer Netzwerke" (BSc/MSc)
2013/2014 Summer	"Komplexe adaptive dynamische Systeme" (BSc/MSc)
2012/2013 Summer	"Komplexe adaptive dynamische Systeme" (BSc/MSc)

RESEARCH OUTPUT

55 journal papers, **2 pre-prints** (6048 citations; h-index 33; i10-index 52) (Source: Google Scholar, 03/2025), and **3 Monographs and book chapters**.

Pre-prints

[P1] Tiago P. Peixoto, "Uncertainty quantification and posterior sampling for network reconstruction," arXiv: 2503.07736

[P2] Tiago P. Peixoto, "Scalable network reconstruction in subquadratic time," arXiv: 2401.01404

Journal papers

[1] Tiago P. Peixoto, "Network reconstruction via the minimum description length principle," Phys. Rev. X 15, 011065 (2025)

[2] Zachary P. Neal, Zack W. Almquist, James Bagrow, Aaron Clauset, Jana Diesner, Emmanuel Lazega, Juniper Lovato, James Moody, Tiago P. Peixoto, Zachary Steinert-Threlkeld, Andreia Sofia Teixeira, "Recommendations for sharing network data and materials," Network Science 1-14 (2024)

[3] Tiago P. Peixoto, Alec Kirkley, "Implicit models, latent compression, intrinsic biases, and cheap lunches in community detection," Phys. Rev. E 108, 024309 (2023)

[4] Leto Peel, Tiago P. Peixoto, Manlio De Domenico, "Statistical inference links data and theory in network science," Nature Communications 13, 6794 (2022)

[5] Tiago P. Peixoto, "Ordered community detection in directed networks," Phys. Rev. E 106, 024305 (2022)

[6] Tiago P. Peixoto, "Disentangling homophily, community structure and triadic closure in networks," Phys. Rev. X 12, 011004 (2022)

[7] Felipe Vaca-Ramírez, Tiago P. Peixoto, "Systematic assessment of the quality of fit of the stochastic block model for empirical networks," Phys. Rev. E 105, 054311 (2022)

[8] Federico Battiston, Enrico Amico, Alain Barrat, Ginestra Bianconi, Guilherme Ferraz de Arruda, Benedetta Franceschiello, Iacopo Iacopini, Sonia Kéfi, Vito Latora, Yamir Moreno, Micah M. Murray, Tiago P. Peixoto, Francesco Vaccarino, and Giovanni Petri, "The physics of higher-order interactions in complex systems," Nature Physics 17, 1093–1098 (2021)

[9] Tiago P. Peixoto, "Revealing consensus and dissensus between network partitions," Phys. Rev. X 11 021003 (2021)

[10] Jean-Gabriel Young, Giovanni Petri, Tiago P. Peixoto, "Hypergraph reconstruction from network data," Commun Phys 4, 135 (2021)

[11] Charles C. Hyland, Yuanming Tao, Lamiae Azizi, Martin Gerlach, Tiago P. Peixoto, Eduardo G. Altmann, "Multilayer networks for text analysis with multiple data types," EPJ Data Science volume 10, 33 (2021)

[12] Lizhi Zhang, Tiago P. Peixoto, "Statistical inference of assortative community structures," Phys. Rev. Research 2 043271 (2020)

[13] Tiago P. Peixoto, "Merge-split Markov chain Monte Carlo for community detection," Phys. Rev. E 102 012305 (2020)

[14] Tiago P. Peixoto, "Latent Poisson models for networks with heterogeneous density," Phys. Rev. E 102 012309 (2020)

[15] Sebastian Morel-Balbi, Tiago P. Peixoto, "Null models for multi-optimized large-scale network structures," Phys. Rev. E 102 032306 (2020)

[16] Tiago P. Peixoto, "Network reconstruction and community detection from dynamics," Phys. Rev. Lett. 123 128301 (2019)

[17] Tiago P. Peixoto, "Reconstructing networks with unknown and heterogeneous errors," Phys. Rev. X 8 041011 (2018)

[18] Martin Gerlach, Tiago P. Peixoto, Eduardo G. Altmann, "A network approach to topic models," Science Advances 4 eaaq1360 (2018)

[19] Tiago P. Peixoto, "Nonparametric weighted stochastic block models," Phys. Rev. E 97 012306 (2018)

[20] Tiago P. Peixoto, Laetitia Gauvin, "Change points, memory and epidemic spreading in temporal networks," Sci. Rep. 8 15511 (2018)

[21] Toni Vallès-Català, Tiago P. Peixoto, Roger Guimerà, Marta Sales-Pardo, "Consistencies and inconsistencies between model selection and link prediction in networks," Phys. Rev. E 97 062316 (2018)

[22] Tiago P. Peixoto, Martin Rosvall, "Modeling sequences and temporal networks with dynamic community structures," Nature Communications 8, 582 (2017)

[23] Tiago P. Peixoto, "Nonparametric Bayesian inference of the microcanonical stochastic block model," Phys. Rev. E 95 012317 (2017)

[24] Guilherme Ferraz de Arruda, Emanuele Cozzo, Tiago P. Peixoto, Francisco A. Rodrigues, Yamir Moreno, "Disease localization in multilayer networks," Phys. Rev. X 7 1 011014 (2017)

[25] Darko Hric, Tiago P. Peixoto, Santo Fortunato, "Network structure, metadata, and the prediction of missing nodes and annotations," Phys. Rev. X 6 3 031038 (2016)

[26] M. E. J. Newman, Tiago P. Peixoto, "Generalized communities in networks," Phys. Rev. Lett. 115, 088701 (2015)

[27] Rico Fisher, Jorge C. Leitão, Tiago P. Peixoto, Eduardo G. Altmann, "Sampling motif-constrained ensembles of networks," Phys. Rev. Lett. 115, 188701 (2015)

[28] Tiago P. Peixoto, "Inferring the mesoscale structure of layered, edge-valued and time-varying networks," Phys. Rev. E 92, 042807 (2015)

[29] Tiago P. Peixoto, "Model selection and hypothesis testing for large-scale network models with overlapping groups," Phys. Rev. X 5, 011033 (2015)

[30] Marco Möller, Tiago P. Peixoto, "Maximum-entropy large-scale structures of Boolean networks optimized for criticality," New J. Phys. 17 043021 (2015)

[31] Christopher Priester, Sebastian Schmitt, Tiago P. Peixoto, "Limits and Trade-Offs of Topological Network Robustness," PLoS ONE 9(9): e108215 (2014)

[32] Tiago P. Peixoto, "Hierarchical block structures and high-resolution model selection in large networks," Phys. Rev. X 4, 011047 (2014)

[33] Tiago P. Peixoto, "Efficient Monte Carlo and greedy heuristic for the inference of stochastic block models," Phys. Rev. E 89, 012804 (2014)

[34] Tiago P. Peixoto, "Eigenvalue Spectra of Modular Networks," Phys. Rev. Lett. 111 9 098701 (2013)

[35] Sebastian M. Krause, Tiago P. Peixoto, Stefan Bornholdt, "Spontaneous centralization of control in a network of company ownerships," PLoS ONE 8(12): e80303 (2013)

[36] Tiago P. Peixoto, "Parsimonious Module Inference in Large Networks," Phys. Rev. Lett. 110 148701 (2013)

[37] Tiago P. Peixoto, Stefan Bornholdt, "Evolution of Robust Network Topologies: Emergence of Central Backbones," Phys. Rev. Lett. 109 11 118703 (2012)

[38] Tiago P. Peixoto, "Entropy of stochastic blockmodel ensembles," Phys. Rev. E 85 5 056122 (2012)

[39] Tiago P. Peixoto, Stefan Bornholdt, "No Need for Conspiracy: Self-Organized Cartel Formation in a Modified Trust Game," Phys. Rev. Lett. 108 21 218702 (2012)

[40] Tiago P. Peixoto, "Emergence of robustness against noise: A structural phase transition in evolved models of gene regulatory networks," Phys. Rev. E 85 4 041908 (2012)

[41] Eva Ackermann, Tiago P. Peixoto, Barbara Drossel, "Reliable dynamics in Boolean and continuous networks," New J. Phys. 14 12 123029 (2012)

[42] Tiago P Peixoto, "The behavior of noise-resilient Boolean networks with diverse topologies," J. Stat. Mech. 2012 01 P01006 (2012)

[43] Oliver Richters, Tiago P. Peixoto, "Trust Transitivity in Social Networks," PLOS ONE 6 4 e18384 (2011)

[44] Tiago P Peixoto, Barbara Drossel, "Density profile and polymer configurations for a polymer melt in a regular array of nanotubes," New J. Phys. 13 7 073030 (2011)

[45] T. P. Peixoto, "The phase diagram of random Boolean networks with nested canalizing functions," Eur. Phys. J. B 78 2 187–192 (2010)

[46] Christoph Schmal, Tiago P Peixoto, Barbara Drossel, "Boolean networks with robust and reliable trajectories," New J. Phys. 12 11 113054 (2010)

[47] Tiago P. Peixoto, "Redundancy and Error Resilience in Boolean Networks," Phys. Rev. Lett. 104 4 048701 (2010)

[48] Tiago P. Peixoto, Katharina Doblhoff-Dier, Jörn Davidsen, "Spatiotemporal correlations of aftershock sequences," J. Geophys. Res. 115 B10309 (2010)

[49] Pitamber Mahanandia, Jörg J. Schneider, Marina Khaneft, Bernd Stühn, Tiago P. Peixoto, Barbara Drossel, "Polymer confinement effects in aligned carbon nanotubes arrays," Phys. Chem. Chem. Phys. 12 17 4407 (2010)

[50] Tiago P. Peixoto, Barbara Drossel, "Boolean networks with reliable dynamics," Phys. Rev. E 80 5 056102 (2009)

[51] Tiago P. Peixoto, Barbara Drossel, "Noise in random Boolean networks," Phys. Rev. E 79 3 036108 (2009)

[52] Tiago P. Peixoto, Jörn Davidsen, "Network of recurrent events for the Olami-Feder-Christensen model," Phys. Rev. E 77 6 066107 (2008)

[53] Tiago P. Peixoto, Carmen P. C. Prado, "Network of epicenters of the Olami-Feder-Christensen model of earthquakes," Phys. Rev. E 74 1 016126 (2006)

[54] Tiago P. Peixoto, Carmen P. C. Prado, "Statistics of epicenters in the Olami-Feder-Christensen model in two and three dimensions," Physica A 342 1-2 171–177 (2004)

[55] Tiago P. Peixoto, Carmen P. C. Prado, "Distribution of epicenters in the Olami-Feder-Christensen model," Phys. Rev. E 69 2 025101 (2004)

Book chapters

[B1] Tiago P. Peixoto, "Descriptive vs. inferential community detection in networks: pitfalls, myths, and half-truths," Elements in the Structure and Dynamics of Complex Networks, Cambridge University Press (2023)

[B2] Tiago P. Peixoto, Martin Rosvall, "Modelling Temporal Networks with Markov Chains, Community Structures and Change Points," Chapter in "Temporal Network Theory," edited by Holme P., Saramäki J. (Springer, 2023)

[B3] Tiago P. Peixoto, "Bayesian stochastic blockmodeling," Chapter in "Advances in Network Clustering and Blockmodeling," edited by P. Doreian, V. Batagelj, A. Ferligoj (Wiley, 2019)

Other publications

[O1] Tiago P. Peixoto, "The `graph-tool` Python library," figshare (2014), Available at `https://graph-tool.skewed.de`

SOFTWARE PROJECTS

`graph-tool`: A comprehensive Python network library, including structural, dynamical and statistical algorithms, as well as visualization. Free and Open Source, released under the LGPLv3 license, fully documented, with high-performance algorithms written in C++, using template meta-programming and OpenMP parallelism. Available at: `https://graph-tool.skewed.de`

Netzschleuder: Online catalogue and repository of over 160K network datasets with the aim of aiding scientific research. The website is meant to be browsed both by humans and machines alike, and can also be accessed via a convenient JSON API, or via the `graph-tool` library. The network datasets themselves are available in several machine-readable formats, in particular gt, GraphML, GML and CSV. Available at: `https://networks.skewed.de`