Juste Raimbault

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Positions

March 2018-August 2019

Post-doctoral Researcher, *Complex Systems Institute - UPS CNRS 3611 ISC-PIF*, Paris, France.
Postdoc project: *Extending methods to explore spatial simulation models*

Journal papers

Raimbault, J. (2018). Calibration of a density-based model of urban morphogenesis. *PloS one, 13(9), e0203516.*

Raimbault, J. (2018). Indirect evidence of network effects in a system of cities. Environment and Planning B: Urban Analytics and City Science, 2399808318774335.

Bergeaud, A., Potiron, Y., & Raimbault, J. (2017). Classifying patents based on their semantic content. *PloS one*, 12(4), e0176310.

Book chapters

Raimbault, J. (2018). An urban morphogenesis model capturing interactions between networks and territories, *forthcoming in Mathematics of Urban Morphology. D'Acci L., ed. Springer Nature - Birkhauser Mathematics.* arXiv preprint arXiv:1805.05195

Raimbault, J. (2018). Models for the co-evolution of cities and networks, *forthcoming in Handbook on Cities and Networks, Rozenblat C., Neal Z., eds.* arXiv preprint arXiv:1804.09430

Raimbault, J. (2018). Relating complexities for the reflexive study of complex systems, *forthcoming in Theories and models of urbanization. Pumain D., ed. Springer Lecture Notes in Morphogenesis.*

Raimbault, J. (2018). Unveiling co-evolutionary patterns in systems of cities : systematic exploration of the SimpopNet model, *forthcoming in Theories and models of urbanization. Pumain D., ed. Springer Lecture Notes in Morphogenesis.*

Raimbault, J. (2018). Mutations of transportation networks in China, *forthcoming in Medium Project e-book. Aveline N., ed.*

Conference papers

Raimbault, J. (2018). Modélisation des interactions entre réseaux de transport et territoires : une approche par la co-évolution. forthcoming in *Actes des Journées Pacte-Citeres.*

Raimbault, J. (2017). An applied knowledge framework to study complex systems, *Complex Systems Design & Management* (pp.31-45). arXiv:1706.09244

Raimbault, J. (2017). Identification of Causalities in Spatio-temporal Data, Sageo 2017 Proceedings. arXiv:1709.08684

Raimbault, J. (2017). A Discrepancy-Based Framework to Compare Robustness Between Multi-attribute Evaluations. In *Complex Systems Design & Management* (pp. 141-154), Springer.

Raimbault, J. (2017). Investigating the empirical existence of static user equilibrium. *Transportation Research Procedia*, 22, 450-458.

Raimbault, J. (2017). Models coupling urban growth and transportation network growth: An algorithmic systematic review approach. *Plurimondi*, (17), *ECTQG 2015 Proceedings.* arXiv:1605.08888

Raimbault, J. (2014). User-Based Solutions for Increasing Level of Service in Bike-Sharing Transportation Systems. In *Complex Systems Design & Management* (pp. 31-44), Springer. **Best Student Paper Award at CSDM 2014.**

Raimbault, J., Banos, A. & Doursat, R. (2014) A Hybrid Network/Grid Model of Urban Morphogenesis and Optimization. *Proceedings of the 4th International Conference on Complex Systems and Applications* (ICCSA 2014), June 23-26, 2014, Université de Normandie, Le Havre, France; M. A. Aziz-Alaoui, C. Bertelle, X. Z. Liu, D. Olivier, eds.: pp. 51-60.

Communications

Des systèmes naturels aux systèmes urbains: génération de réseaux de transport optimaux par modèle slime-mould, *poster at Biomim'expo 2018, Paris, Oct. 2018.*

A multi-dimensional percolation approach to characterize sustainable mega-city regions, *MARAMI 2018, Avignon, Oct. 2018.*

A systematic comparison of interaction models for systems of cities, *Conference on Complex Systems 2018, Thessaloniki, Sept. 2018.*

Extracting knowledge from simulation models: trends and perspectives from the viewpoint of quantitative geography, *Conference on Complex Systems 2018, Thessaloniki, Sept. 2018.*

Multi-modeling the morphogenesis of transportation networks. In *Artificial Life Conference Proceedings (pp. 382-383). Tokyo, July 2018.*

Modeling Urban Morphogenesis: towards an integration of territories and networks, *GoPro 2017, Lyon, Dec. 2017.*

Complexity, Complexities and Complex Knowledge, *Geodivercity International Workshop, Paris, October 2017.*

Modeling the Co-evolution of Urban Form and Transportation Networks, *Conference on Complex Systems 2017, Cancun, Sept. 2017.*

Raimbault J. & Baffi S. (2017). Structural Segregation: Assessing the impact of South African Apartheid on Underlying Dynamics of Interactions between Networks and Territories, *ECTQG 2017, York, Sept. 2017*

Invisible Bridges ? Scientific landscapes around similar objects studied from Economics and Geography perspectives, *ECTQG 2017, York, Sept. 2017*

Raimbault, J. & Bergeaud, A. (2017). The Cost of Transportation: Spatial Analysis of Fuel Prices in the US, *EWGT 2017, Budapest, Sept. 2017* arxiv:1706.07467

Cottineau C., Raimbault J., Le Texier M., Le Néchet F. & Reuillon R. (2017). Initial spatial conditions in simulation models: the missing leg of sensitivity analyses?, *Geocomputation 2017, Leeds, Sept. 2017*

A macro-scale model of co-evolution for cities and transportation networks, *Medium International Conference, Guangzhou, June 2017*

Losavio C. & Raimbault J. (2017). Agent-based Modeling of Migrant Workers Residential Dynamics within a Mega-city Region: the Case of Pearl River Delta, China, *Urban China Development International Conference, London, May 2017*

Co-construire Modèles, Etudes Empiriques et Théories en Géographie Théorique et Quantitative: le cas des Interactions entre Réseaux et Territoires. *Treizièmes Rencontres de ThéoQuant, Besançon, May 2017*

Un Cadre de Connaissances pour une Géographie Intégrée. *Journée des jeunes chercheurs de l'Institut de Géographie de Paris, Paris, April 2017*

Towards a Theory of Co-evolutive Networked Territorial Systems: Insights from Transportation Governance Modeling in Pearl River Delta, China. *Medium Seminar-Urban Sustainable Development in Zhuhai, Guangzhou, December 2016*

Models of growth for system of cities : Back to the simple, *Conference on Complex Systems 2016, Amsterdam, Sep 2016.*

Raimbault J., Bergeaud A. and Potiron Y. (2016). Investigating Patterns of Technological Innovation. *Conference on Complex Systems 2016, Amsterdam, Sep 2016.*

For a Cautious Use of Big Data and Computation. *Royal Geographical Society - Annual Conference 2016 - Session : Geocomputation, the Next 20 Years (1), London, Aug 2016.*

Indirect Bibliometrics by Complex Network Analysis. *20e Anniversaire de Cybergeo, Paris, May 2016.*

Raimbault, J. & Serra, H. (2016). Game-based Tools as Media to Transmit Freshwater Ecology Concepts, *poster corner at SETAC 2016, Nantes, May 2016.*

Raimbault, J. (2016). Génération de données Synthétiques corrélées, *Actes des Journées de Rochebrune, January 2016.*

Le Nechet, F. & Raimbault, J. (2015). Modeling the emergence of metropolitan transport authority in a polycentric urban region, *ECTQG 2015, Bari, Sept. 2015.*

Hybrid Modeling of a Bike-Sharing Transportation System, *poster at ICCSS 2015, Helsinki, June 2015.*

Raimbault, J. & Gonzales, J. (2015). Application de la Morphogénèse de Réseaux Biologiques à la Conception Optimale d'Infrastructures de Transport, *poster presented at Rencontres du Labex Dynamite, Paris, May 2015.*

Working Papers

Raimbault J., Cottineau C., Le Texier M., Le Nechet F. & Reuillon R. (2018). Space Matters: extending sensitivity analysis to initial spatial conditions in geosimulation models. *Under review (second round) for Computer, Environment and Urban Systems.*

Raimbault, J. (2017). Exploration of an interdisciplinary scientific landscape. *Under review (second round) for Scientometrics.* arXiv preprint arXiv:1712.00805.

Raimbault, J. & Le Nechet, F. (2018). Closing the loop: Introducing Endogenous Transport Provision in a LUTI Model. *Under review for Journal of Transport Geography.*

Raimbault J., Broere J., Somveille M., Serna J.M., Strombom E. Moore C., Sugar L., Zhu B. (2018). A spatially-explicit agent based model for industrial symbiotic processes. *Under review for Resources Conservation and Recycling.*

Banos A., Chasset P.-O., Commenges A. Cottineau C., Pumain D. & Raimbault J. (2018). Where do you mean? A spatialised bibliometrics approach of a scientific journal production. *Under review for EPB.*

Raimbault, J. & Bergeaud, A. (2018). A large scale analysis of fuel prices spatial variability. *Under review for Transportation Research Part A.* arXiv preprint arxiv:1706.07467.

Raimbault, J. (2018). Espace et complexités des systèmes territoriaux. *Under review for Rochebrune 2019.*

Raimbault, J. (2018). Co-evolution and morphogenetic systems. arXiv preprint arxiv:1803.11457.

Raimbault, J. (2018). Reconciling complexities: for a stronger integration of approaches to socio-technical systems. arXiv preprint arxiv:1805.10195.

Antelope, C., Hubatsch, L., Raimbault, J., and Serna, J. M. (2016). An interdisciplinary approach to morphogenesis. *Working Paper, Santa Fe Institute CSSS 2016.*

Education

Feb. 2015–Feb. 2018	**PhD in Geography**, *Géographie-cités (UMR 8504 CNRS) / LVMT (UMR-T 9403 IFSTTAR).* Characterizing and Modeling the Co-evolution of Transportation Networks and Territories, *under the supervision of* HDR A. BANOS *and* MCF F. LE NECHET.
June 2016	**SFI Complex Systems Summer School**, *Santa Fe Institute*, Santa Fe, USA.
2012–2014	**MSc Complex Systems Science**, *Ecole Polytechnique ParisTech*, Palaiseau, France. Agent-based modeling, Evidence-based methods from Therapeutic Evaluation, Theoretical Analysis of Physical Complex Systems, Epistemology, Complex Networks, Datamining, Signal Processing *Memoire:* Complex Network Analysis for Real-time Trend Detection in a Financial System
2013–2014	**MSc Urbanism, Environment, Transportation**, *Ecole Nationale des Ponts et Chaussées ParisTech*, Marne-la-Vallée, France. Analysis of Territorial Systems, Management and design of Transportation Systems, Urbanism, History of Urbanism, Urban Economics, Environmental Planning and Design *Memoires:* Interdisciplinary approaches of modeling and simulations in urban planning and architecture (M1) ; Discrete Choice Models for Bike-sharing Transportation Systems (M2)
2010–2012	**BSc**, *Ecole Polytechnique ParisTech*, Palaiseau, France. Multidisciplinary scientific formation (mathematics, computer science, applied mathematics, physics, mecanics, biology, economics) *Research internship in Machine Learning and Artificial Intelligence*: Design and implementation of a matching algorithm

Grants and Awards

MEDIUM mobility grant, Young Researcher mobility grant for China, MEDIUM project.

PhD grant, *allocation doctorale AMX* for three years from Graduate School, Ecole Polytechnique.

Best Student Paper Award at Conference CSD&M, Paris, December 2014.

Teaching

March 2018	**Seminar big data in transportation studies**, *Ecole des Ponts et Chaussées*, Champs-sur-Marne.
Spring 2017	**Teaching Assistant**, *Université Paris 7*, Paris, France. Teaching Assistant: *Statistics and Cartography*, *Spatial Analysis* and *Professionalization for Geographers.*

Feb. 2016	**Seminar Geography and Big Data**, *Université Paris 1 Sorbonne*, Paris, France.
Fall 2015	**Teaching Assistant**, *Université Paris 7*, Paris, France.
	Teaching Assistant: *Introduction to Geography* and *Introduction to GIS*.

Reviewing

since 2018	Reviewing for *Ecological Modeling*
since 2015	Reviewing for *PLoS ONE*
since 2015	Reviewing for *Cybergeo, European Journal of Geography*

Scientific Activity

Since Oct. 2018	Participation in the CNRS experimental project "*Incubator for scientific mediation*"
Sept. 2018	CCS 2018. Satellite organisation: *New methods and epistemologies to explore simulation models*
Sept. 2017	ECTQG 2017. Session organisation: *Bridges between Economics and Geography: Lessons from Modeling Perspectives*
June 2017	Medium Conference 2017. Session organisation: *Spatio-temporal Behavior in Complex Urban Systems*
June 2014	EMCSS Seminar organisation: Comparing Top-down and Bottom-up approaches to Urban Systems

Computer skills

OS	Unix (OSX, Ubuntu, CentOS)	Scripts	Shell, AppleScript
Programming	Java, Python, Scala, C/C++, OCaml	Typography	LaTeX, API OO.org, ScalaTex
Web	php, XHTML, CSS, AJAX	Database	MySQL, MongoDB, PostgreSQL
Scientific	R, NetLogo, Gama, OpenMole, Scilab, Matlab, Gephi	GIS	QGIS, PostGIS, TransCAD, Ocad

Languages

French, *Native*	**English**, *Fluent*
German, *Fluent, European Baccalaureate*	**Mandarin**, *Notions, level HSK3*