Paul Chapron

Computer Science, Ph.D.
Modeling, Simulation, Model Analysis

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Date of Birth: February 17th, 1984

Current Position

Since December 2017
Researcher at French National Institute of Geography and Forestry Information (IGN), LaSTIG laboratory, Strudel (ex-COGIT) team.
Current Focus: right to build simulation, urban sprawl simulation and spatial simulation model analysis.

Scientific Interests

Main Themes
Social and Spatial Simulation, Agent Based Modeling and Simulation, Complex Systems, Simulation Models Evaluation and Validation.

Related Themes
Urban Geography, Urban planning,Systems of Cities, Sociology of Organizations, Social Networks Analysis

Education and past Positions

February 2017
Research Engineer, *Complex Systems Institute of Paris Ile de France (ISCPIF), CNRS UPS 3611.*, FUI Project Dynamicity. Calibration and robustness assessment of urban planning models. PI : Romain Reuillon. .

Oct-Dec2016
Postdoc, *French National Institute of Geography and Forestry Information (IGN)*, Exploration of morphological diversity of buildings according to Right to Build reglementation. Supervisor: Mickaël Brasebin and Julien Perret.

2015-2016
Postdoc and Teaching Assistant, *Institute of Geography and Durability, University of Lausanne*, Analysis and exploration of innovation geographical networks. Supervisor: Pr. Céline Rozenblat.

2013-2014
Postdoc, *Géographie-cités (UMR 8504 CNRS Paris I Paris VII)*, Modeling of system of cities evolution, within ERC grant project GeoDiverCity. Supervisor: Denise Pumain.

2007-2012
PhD, *Université Toulouse Capitole/IRIT UT1 UMR 5505*, SMAC team, Title: *"Modélisation et analyse des organisations sociales: Propriétés Structurelles, régulation des comportements et évolutions"*.Defended on May, 29th 2012.

2006-2007
Research Master's degree, *Université Henri Poincaré*, Nancy.

2003-2006
Computer Science Engineering degree, *ESIAL (now Telecom Nancy)*, Nancy.

Teaching

2015-2016   **Teaching Assistant**, *University of Lausanne*, IGD.

Involved in the **MOOC** *"Analysis, Visualization and Simulation of Geographical Networks"* of Pr. Céline Rozenblat. Video courses, courses materials and tutorials production.

Topics : Clustering techniques, Random network and ERGM models, Explanatory analysis of networks, Simple network dynamics simulation.

Softwares : TULIP (visualization), R (analysis and modeling), Netlogo (simulation)

2007-2012   **Teaching Assistant**, *University of Toulouse Capitole*.

Office software training	Bachelor students
Information Systems	Master students
Computer Architecture	Master students
Social Systems Modeling and Simulation	Master students

2006-2007   **Contractor Teaching Assistant**, *Université de Nancy II*.

Office software training	Bachelor students

Peer-reviewed Articles

International Journal Articles

[1] Paul Chapron.   Analyse de reseau de pouvoir au sein d'une organisation sociale.   *Nouvelles Perspectives en Sciences Sociales*, 6(2):233–256, 2011.

[2] Paul Chapron.   Analyse structurelle des champs de capacité d'action dans les organisations sociales. outils analytiques pour la caractérisation de la coopération. *Studia Informatica Universalis*, 10(1):98–128, 2012.

[3] Clémentine Cottineau, Paul Chapron, and Romain Reuillon. Growing models from the bottom up. an evaluation-based incremental modelling method (ebimm) applied to the simulation of systems of cities. *Journal of Artificial Societies and Social Simulation*, 18(4):9, 2015.

[4] Clémentine Cottineau, Romain Reuillon, Paul Chapron, Sébastien Rey-Coyrehourcq, and Denise Pumain. A modular modelling framework for hypotheses testing in the simulation of urbanisation. *Systems*, 3(4):348, 2015.

[5] Christophe Sibertin-Blanc, Pascal Roggero, Françoise Adreit, Bertrand Baldet, Paul Chapron, Joseph El-Gemayel, Matthias Mailliard, and Sandra Sandri. Soclab: A framework for the modeling, simulation and analysis of power in social organizations. *Journal of Artificial Societies and Social Simulation*, 16(4):8, 2013.

French Journal Articles

[6] Joseph El Gemayel, Paul Chapron, Françoise Adreit, and Christophe Sibertin-Blanc. Quand et comment les acteurs sociaux peuvent-ils coopérer ? Un algorithme de simulation pour la négociation de leurs comportement. *Revue d'Intelligence Artificielle*, 25, 2011.

[7] Christophe Sibertin-Blanc, Françoise Adreit, Paul Chapron, Joseph El Gemayel, Matthias Mailliard, Pascal Roggero, and Claude Vautier. Compte-rendu d'une recherche interdisciplinaire entre sociologues et informaticiens : de la sociologie de l'action organisée au logiciel SocLab. *Technique et Science Informatiques*, 29(8-9):1081–1115, 2010.

International Conference Proceedings

[8] Paul Chapron and Christophe Sibertin-Blanc. Analysis of the power network among the actors of a social organization (regular paper). In D. Kazakov and G. Tsoulas, editors, *AISB Symposium on Social Networks and Multiagent Systems, York, 04/04/2011-07/04/2011*, pages 2–7, http://www.aisb.org.uk, avril 2011. Society for the Study of Artificial Intelligence and the Simulation of Behaviour.

[9] Joseph El Gemayel, Christophe Sibertin-Blanc, and Paul Chapron. Impact of tenacity upon the Behaviors of Social Actors (regular paper). In Alexis Drogoul, Benoit Gaudou, and Nicolas Marilleau, editors, *Applied Agent based simulator Engineering for Complex System study, Nagoya, Japan, 13/12/2009*, 2009.

French Conferences Proceedings

[10] Mickaël Brasebin, Paul Chapron, Guillaume Chérel, Mathieu Leclaire, Imran Lokhat, Julien Perret, and Romain Reuillon. Apports des méthodes d'exploration et de distribution appliquées à la simulation des droits à bâtir. In *Spatial Analysis and GEOmatics 2017*, Rouen, France, November 2017. INSA de rouen.

[11] Paul Chapron, Mickaël Brasebin, Julien Perret, and Romain Reuillon. Exploration de l'influence de la réglementation urbaine locale sur la morphologie des formes bâties par simulation distribuée. In *13e Rencontres de Théo Quant*, Besançon, 2017. ThéMA, Université de Franche-Comté.

Book Contributions

Book chapters

[12] Françoise Adreit, Paul Chapron, Joseph El GEmayel, Pascal Roggero, Sandra Sandri, and Christophe Sibertin-Blanc. Une formalisation de la sociologie de l'action organisée : méta-modèle, simulation et étude analytique. In Denis Phan, editor, *Ontologies et modélisation par SMA en SHS (informatique et systèmes d'information, rta)*. Hermes Science Publications, 5 2014.

[13] Joseph El Gemayel, Christophe Sibertin-Blanc, and Paul Chapron. Impact of Tenacity upon the Behaviors of Social Actors. In Quan Bai and Noaki Fukuta, editors, *Advances in Practical Multi-Agent Systems*, volume 325, pages 287–306. Springer, http://www.springerlink.com, 2011.

[14] Chapron Paul, Chérel Guillaume, Cottineau Clémentine, Cura Robin, Leclaire Mathieu, Pumain Denise, Rey-Coyrehourcq Sébastien, Reuillon Romain, Schmitt Clara, and Swerts Elfie. *Urban Dynamics and Simulation Models*. Springer International Publishing, 2017.

Other Publications and Communications

Workshops and Communications

[15] Françoise Adreit, Paul Chapron, , Christophe Sibertin-Blanc, Pascal Roggero, and Sandra Sandri. Une ontologie des systèmes d'actions concrets. Rencontres interdisciplinaires sur les systèmes complexes naturels et artificiels - Journées de Rochebrune, Rocchebrune, 19/01/09-23/01/09., 2008.

[16] Françoise Adreit, Paul Chapron, Pascal Roggero, and Christophe Sibertin-Blanc. Régulation des organisations et rationalité des acteurs. XVIII Congrès de l'AISLF, Istanbul (conférence sans actes), 07/07/08-11/07/08, 2008.

[17] Paul Chapron. Analysing the dynamics of a social organization by means of its transfer function. International Conference "Interactions in Complex Systems" and 12th International Workshop "Spatial Econometrics and Statistics", June 17-19, Université d'Orléans http://www.univ-orleans.fr/mapmo/peps/?q=content/international-conference-interactions-complex-systems-and-12th-international-workshop http://www.univ-orleans.fr/mapmo/peps/sites/default/files/conferences/programme_ISC_Print.pdf, 2013.

[18] Paul Chapron. Diversité des formes d'îlots urbains à partir d'un Plan Local d'Urbannisme. Journée de la recherche IGN, 23 mars 2017. http://recherche.ign.fr/jr/jr17.php, 2013.

[19] Paul Chapron and Joseph El Gemayel. Social Actors Rationality within Organizations. Simulation of Complex Social Systems, (conférence sans actes) Sevilla, Spain, 09/11/2009, 2009.

[20] Clémentine Cottineau and Paul Chapron. Back in the USSR: a series of models for simulating urban evolution. Urban Systems Modeling: advances from GeoDiverCity and MECHANICITY ERC programmes. Satellite meeting of the European Conference on Complex Systems 2013, Barcelona (Spain), 2013.

[21] Clémentine Cottineau and Paul Chapron. Step-wise modeling. An Incremental method for modeling cities trajectories in the post-Soviet urban system. 18th European Colloquium in Theoretical and Quantitative Geography (ECTQG) , 2013.

[22] Clémentine Cottineau and Paul Chapron. Evaluation & calibration for the comparison of abms of cities' trajectories. Paper Session: 2539 Geosimulation Models 3: Applications - Macro,AAG Meeting 2014, Tampa (Florida) http://meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=19892, 2014.