Curriculum Vitæ

Edward Laurence
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Education

Ph.D physics, *Université Laval*, 2016 - [2019]
Supervisors : Pr Louis J. Dubé et Patrick Desrosiers Ph.D

M.Sc. physics, *Université Laval*, 2014 - 2016
Title : Complex networks and connectomic : from hierarchy to functions
Supervisors : Pr. Louis J. Dubé, Patrick Desrosiers Ph.D and Pr. Daniel Côté

B.Sc. physics (Specialization in theorical physics), *Université Laval*, 2011 - 2014

Work experience

Graduate teaching assistant (Université Laval)

1. PHY-2502 Non-linear dynamics, chaos and complexity - Winter 2017 and 2015
   under the supervision of Pr. Louis J. Dubé
2. PHY-3500 Numercial physics - Winter 2016
   under the supervision of Pr. Philippe Després
3. PHY-3000 Statistical physics - Fall 2015 and 2014
   under the supervision of Pr. Louis J. Dubé

Undergraduate research assistant, Groupe de recherche Dynamica, under the supervision of Pr. Louis J. Dubé, *Université Laval*, Summer 2013
Undergraduate research assistant, Eau Terre Environnement, under the supervision of Pr. Alain Mailhot, *Institut National de la Recherche Scientifique (INRS)*, 2012 - 2013

Awards

Sentinel North Doctoral Fellowship (18 000$), *Sentinel North*, 2016-2017
Graduate research award (15 000$), *Fond de recherche Nature et technologies (FRQNT)*, 2015-2016
Undergraduate student research award (4 500$), *Natural Sciences and Engineering Research Council of Canada (NSERC)*, 2012
Franco-Rasetti scholarship (1 000$), *Département de physique, de génie optique et d'optique*, Université Laval, 2011

Outstanding Poster Award, *9th International School and Conference on Network Science*, Berkeley, 2014
Third place for oral, *Canadian Undergraduate Physics Conference*, Vancouver, 2012
Participation to Quebec's final, *Le Championnat International des Jeux Mathématiques et Logiques*, 2012
Participation to Quebec's semi-final, *Le Championnat International des Jeux Mathématiques et Logiques*, 2010, 2011, 2014

Other activities, competences and interests

Volunteering and involvement
Violinist for patients at Saint-François d'Assise Hospital (Music therapy), 2015 - 2016
Tutor in physics and mathematics at Collège François-Xavier-Garneau, 2009-2014
Chief editor of the physics students yearbook (100 pages), 2014
Director of physics students newspapers, 2013-2014
Volunteer for the *promotional activities of Université Laval*, for *Coupe de Sciences*, for *Expo-Science* and for *Jeux Photoniques*, 2009-2015

Competences
Languages : French, English and basic spanish
Informatics : C/C++, Python, Matlab/GNU Octave, GNU/Linux, R, LaTeX, Swift, HTML/CSS, Django, MySQL

Interests
Informatics : Mobile developpement (iOS)
Sports : Basket-Ball, Running, Squash
Music : Violin (orchestra member and volunteer for music therapy), accoustic guitar and Ukulele

Scientific contributions

Papers in refereed journals

2. **Complex networks as an emerging property of hierarchical preferential attachment**
   L. Hébert-Dufresne, **E. Laurence**, A. Allard, J.-G. Young and L. J. Dubé, Phys. Rev. E., **92** 062809, 2015
1. **Relationship between surface temperature and extreme rainfalls : a multi-timescale and event-based analysis**
   G. Panthou, A. Mailhot, **E. Laurence** et G. Talbot, J. Hydrometeor., **15**, 2014, DOI : 10.1175/JHM-D-14-0020.1

Preprint

2. **Susceptible-infected-susceptible dynamics on the rewired configuration model**
   G. St-Onge, J.-G. Young, **E. Laurence**, C. Murphy, and L. J. Dubé, arXiv, **1701.01740**, 2017
1. **Finite size analysis of the detectability limit of the stochastic block model**
   J.-G Young, P. Desrosiers, L. Hébert-Dufresne, **E. Laurence** and L. J. Dubé, arXiv, **1701.00062**, 2016

Selected presentations

11. **Ensemble symmetries and the detectability limit of finite size stochastic block models (SINM 2016)** (oral)
    J.-G. Young, L. Hébert-Dufresne, **E. Laurence**, P. Desrosiers and L. J. Dubé, 11th International School and Conference on Network Science, Seoul (Korea), 2016
10. **Time-dependent Spatial Growth of Complex Networks** (oral)
    C. Murphy, **E. Laurence**, G. St-Onge, J.-G. Young and L. J. Dubé, 11th International School and Conference on Network Science, Seoul (Korea), 2016
9. **Co-evolution of Growth and Dynamics on Network** (poster)
    G. St-Onge, **E. Laurence**, C. Murphy, J.-G. Young and L. J. Dubé, 11th International School and Conference on Network Science, Seoul (Korea), 2016
8. **Exact analytical solution of binary dynamics on networks** (poster)
    E. Laurence, J.-G. Young, S. Melnik and L. J. Dubé, 10th International School and Conference on Network Science, Saragosse (Spain), 2015
7. **Structural preferential attachment : scale-free benchmark graphs for overlapping community detection algorithms** (poster)
    J.-G. Young, L. Hébert-Dufresne, **E. Laurence** and L. J. Dubé, 10th International School and Conference on Network Science, Saragosse (Spain), 2015
6. **Complex networks are an emerging property of hierarchical preferential attachment** (poster)
    L. Hébert-Dufresne, **E. Laurence**, A. Allard, J.-G. Young et L. J. Dubé, 9th International School and Conference on Network Science, Berkeley (USA), 2014, [Outstanding Poster Award]
5. **Relationship between surface temperature and extreme rainfalls : a multi-timescale and event-based analysis** (oral)
    G. Panthou, A. Mailhot, **E. Laurence**, G. Talbot, GEWEX conference, The Hague (NL), 2014
4. **A hierarchical approach for complex networks** (oral)
    E. Laurence, Canadian Undergraduate Physics Conference, Hamilton (ON), 2013
3. **Relationship between surface temperature and rainfall intensities : a multi-timescale and event-based analysis** (oral)
    A. Mailhot, **E. Laurence**, 2013 Joint Scientific Congress of the CMOS, CGU and CWRA, Saskatoon (SK), 2013
2. **Étude des relations entre les précipitations extrêmes et la température** (poster)
    E. Laurence, A. Mailhot, Colloque la recherche hydrologique au Québec, Québec (QC), 2013
1. **Relationship between surface temperature and extreme rainfalls : a multi-timescale and event-based analysis** (oral)
    E. Laurence, Canadian Undergraduate Physics Conference, Vancouver (CB), 2012