

Curriculum-Vitae

Linglong Yuan

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Nationality: Chinese

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Work Experience

- **Postdoctoral Researcher of Prof. Matthias Birkner**

Johannes-Gutenberg-Universität, Mainz, Germany

2015-2017

Team Stochastics (*Stochastik*), Institute of Mathematics.

- **Postdoctoral Researcher of Prof. Takis Konstantopoulos**

Uppsala Universitet, Uppsala, Sweden

2013-2015

Team Analysis and Probability (*Analys och sannolikhetssteori*), Department of Mathematics.

Awards

- **Itô Prize 2017:** The Prize will be awarded in the 39th Conference on Stochastic Processes and their Applications (July 2017), in Moscow, to

An individual-based model for the Lenski experiment, and the deceleration of the relative fitness.
Stochastic Process. Appl. 126(8), 2211-2252, 2016.

Joint work with Adrian Gonzalez-Casanova, Noemi Kurt and Anton Wakolbinger.

The Prize is given bi-annually to the best article published in Stochastic Process. Appl. together with 5000 \$.

- **One of the three best Collective Scientific Projects of the promotion 2006 in Ecole Polytechnique:** The Prize was given to

Chaos, mélange, ordre et structure : de quelques charmes des systèmes dynamiques.

(*Chaos, mixture, order and structure: some charms of dynamical systems*)

Joint work with Lee Antony, Mattei Arnaud, Nguyen Hoang-Nguyen, Pascal Ambroise.

Education

- **PhD**

Université Paris 13, Villetaneuse, France

2010-2013

- **Place:** Supervised by Prof. Jean-Stéphane Dhersin in the laboratory LAGA, in the team Probability-Statistics of Galilei Institute. Defended on December the 3rd 2013 in Université Paris 13, Villetaneuse, France.
- **Title :** Small-time behaviours of Λ n-coalescents with emphasis to the external branch lengths (*Comportements en temps petits des Λ n-coalescents avec l'accent sur les longueurs des branches externes*) .
- **Mention:** Very honorable.
- **Jury :** Jean-François Delmas (President), Julien Berestycki (Reporter), Götz Kersting (Reporter), Sylvie Méléard (Examiner), Yueyun Hu (Examiner), Jean-Stéphane Dhersin (Supervisor).

- **Master 2**

Université Pierre et Marie Curie, Paris, France

2009 - 2010

- **Programme:** Probability and random models.
(*Probabilités et Modèles aléatoires*).
- **Master thesis:** Asymptotic behaviours of an external branch length of certain coalescent processes, supervised by Prof. Jean-Stéphane Dhersin.
(*Comportement asymptotique de la longueur d'une branche externe de certains processus de coalescence*).

- **Engineering formation**

Ecole Polytechnique, Palaiseau, France

2006 - 2010

- **Major:** Mathematical engineering for finance and ecological systems.
(*Ingénierie mathématique pour la finance et les systèmes écologiques*)

- **Bachelor**

Tongji University, Shanghai, China

2003 - 2006

- **Major:** Statistics

Teaching and other achievements

- **Teaching**

- Johannes-Gutenberg-Universität Mainz, Germany
Introduction to Stochastics From 10.2016
Exercise, Level B2
12 sessions, 2 hours each, in total: 24 hours
Lecturer: Prof. Dr. Matthias Birkner.
- Uppsala Universitet, Sweden
Probability and Statistics 09.2015-10.2015
Exercise, Level B3
8 sessions, 3 hours each, in total: 24 hours
Lecturer: Prof. Dr. David Sumpter.
- Université Paris 13, France
Analysis 01.2013-04.2013
(Integrated preparatory course for engineering formation)
Oral exam, Level B1
8 sessions, 1 hour each, in total : 8 hours
Lecturer: Dr. Stéphane Vento.
- Université Paris 13, France
Integration and Probability 01.2013-04.2013
Exercise, Level M1
8 sessions, 3 hours each, in total : 24 hours
Lecturer: Dr. Laurent Tournier.
- Université Paris 13, France
Introduction to Analysis 03.2012-06.2012
(Preparatory course for a group of Chinese students)
Lecture+Exercise, Level B1
34 sessions, 1 hour and half each, in total : 51 hours.
- Université Paris 13, France
Probability and Statistics 09.2011-01.2012
Exercise, Level B1
16 sessions, 1 hour and half each, in total : 24 hours
Lecturer: Prof. Dr. François Dibos.
- Université Paris 13, France
Introduction to Analysis 03.2011-05.2011
(Preparatory course for a group of Chinese students)
Lecture+Exercise, Level B1
25 sessions, 1 hour and half each, in total : 37 hours 30 mins.

- **Review for journals:** Statist. Probab. Lett.; Electron. J. Probab.; J.Math.Anal.Appl.;

- **Organization:**

- Participation and organization of a mini-workshop “Stochastic processes with emphasis to coalescents and branching”. Speakers: Adrian Gonzalez-Casanova, Ingemar Kaj, Clément Foucart, Linglong Yuan. Uppsala, Sweden, 2015.
- One of the organizers of the exhibition “Look into the spaces of 3 dimensions” (*Regards dans les espaces de dimension 3*) in March and October 2013 in Université Paris 13. We had the workshops to show the varieties of 3 dimensions using the videos, the sound equipments, and physical models. Villetaneuse, France, 2013.
- One of the supervisors for the high school students in the “Open Science Internship” (*Stage Science Ouverte*) in Université Paris 13 in June 2011. The aim was to teach the high school students the Mathematical knowledge. Interactive approaches were used in the lectures and exercise sessions to study interesting problems. Villetaneuse, France, 2011.

- **Foreign stays except France:**

- **Postdoc**
Mainz, Germany 2015-2017
- **Postdoc**
Uppsala, Sweden 2013-2015
- **Doctoral internship**
Frankfurt, Germany 05.2013-06.2013
Internship on the modelling of the Lenski experiment, funded by *La Fondation des Sciences Mathématiques de Paris*.
Responsable: Prof. Anton Wakolbinger.
- **Scientific internship**
Shiga, Japan 05.2009-09.2009
Internship in Ritsumeikan University in Japan on the project: Continuous version of Real Business Cycle Model : Deterministic and Stochastic modelling.
Responsable : Prof. Jiro Akahori.

Research interests

- Coalescent theory, branching processes, random trees, measure-valued processes, exchangeability.
- Applications of probability theory in Biology, in Statistics and any other applicable fields.

Articles and projects

• Publications

6. (with S. Janson, T. Konstantopoulos)
On a representation theorem for finitely exchangeable random vectors.
J. Math. Anal. Appl. 2016.
5. (with A. Gonzalez-Casanova, N. Kurt, A. Wakolbinger)
An individual-based model for the Lenski experiment, and the deceleration of the relative fitness.
Stochastic Process. Appl. 2016.
4. (with A. Siri-Jégousse)
Asymptotics of the minimal clade size and related functionals of certain beta-coalescents.
Acta Appl. Math. 2016.
3. (with J.-S. Dhersin)
On the total length of external branches for beta-coalescents.
Adv. in Appl. Probab. 2015.
2. On the measure division construction of Λ -coalescents.
Markov Process. Related Fields. 2014.
1. (with J.-S. Dhersin, A. Siri-Jégousse, F. Freund)
On the length of an external branch in the Beta-coalescent.
Stochastic Process. Appl. 2013.

• Preprints accepted:

1. A generalization of Kingman's model of selection and mutation and the Lenski experiment.
Accepted by Math.Biosci. arXiv preprint arXiv : 1506.02298. 2016.

• Preprints submitted:

2. (with T. Konstantopoulos)
On the extendibility of finitely exchangeable probability measures.
arXiv preprint arXiv : 1501.06188. 2015.
1. (with T. Konstantopoulos, M. Zazanis)
Polynomial approximations to continuous functions and stochastic compositions.
arXiv preprint arXiv :1601.04483. 2016.

• Proceedings

1. (with V. Bansaye, J-F. Delmas, O. Hénard, P. Vallois)
Probabilités et biologie.
ESAIM Proceedings, Volume 44 (2104), 197-213.

- **Projects in progress**

5. (with Matthias Birkner)
Genealogies and inference for populations with highly skewed offspring distributions under further evolutionary forces.
4. (with Götz Kersting)
Kingman's model with random mutation rate: will randomness enhance condensation?
3. Extending a finite exchangeable sequence by signed exchangeable measures.
2. Recursively constructed Kingman's coalescent.
1. (with Clément Foucart, Chunhua Ma)
Limit-law theorems for continuous-state branching processes with immigration.

Skills

- Computer Programming: Matlab, Scilab, Java, C, R, Latex
- Languages: Chinese (mother tongue), French (fluent), English (fluent), German (beginner).

Talks and conferences

- 10.2015: Seminar talk in TU Berlin: De Finetti's theorem for finitely exchangeable sequences.
- 08.2015: Seminar talk in Beijing normal university: The finite exchangeability representation theorem and equivalent conditions for extendibility property.
- 06.2015: Invited joint talk with Adrian Gonzalez-Casanova in Luminy Marseille in the conference "Probability and Biological Evolution": An individual-based model for Lenski's long-term evolution experiment.
- 05.2015: Invited in the 17-th Stockholm-Uppsala symposium in Mathematical statistics: On de Finetti's theorem for finitely exchangeable probability measures.
- 03.2015: Organizer and speaker of the mini workshop "stochastic processes with emphasis to coalescents and branching" in Uppsala University. My talk: A generalization of Kingman's model of selection and mutation.
- 05.2013 : Talk in the seminar of probability in Frankfurt University, Germany: Small-time behavior of Beta n -coalescents.
- 04.2013 : Talk in the scientific meeting in Aussois, France : On the measure division construction of Λ -coalescents.
- 03.2013 : Talk in the seminar of Probability of Université Cergy-Pontoise, France : On the external branch length of Beta coalescent.
- 11.2012 : Talk in the doctoral seminar in Université Paris 13, France : Résoudre certains EDP par lancer un processus de Mouvement Brownien.

- 08.2012 : Talk in the Journées MAS invited by Jean-François Delmas, France : Etude sur le comportement asymptotique de la longueur d'une branche externe de Beta coalescent via la construction récursive.
- 04.2012 : Talk in the working group of doctoral students in Université Paris 6, France : Comportement asymptotique des longueurs des branches externes de certains Λ -coalescents.
- 01.2012 : Talk in the seminar of Mathematics Department in Tongji University, China : The external branch length of Beta coalescent.
- 06.2011 : Talk in the scientific meeting and spring school in Saint Raphaël, France : Comportement asymptotique de la longueur des branches externes de certains beta-coalescents.