

Arno SIRI-JÉGOUSSE

Departamento de Probabilidad y Estadística

IIMAS

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Born Dec, 13th 1982

in Les Lilas (France)

French nationality

Research Topics

Probabilities devoted to population genetics

COALESCENCE THEORY : Coalescents with multiple collisions, Beta-coalescents, Kingman's coalescent.

BRANCHING PROCESSES : Galton-Watson process, Continuous state branching processes.

MEASURE-VALUED PROCESSES : Fleming-Viot process, Generalized Fleming-Viot process.

LÉVY PROCESSES, SELF-SIMILAR PROCESSES.

Positions and internships

2016-present	<i>IIMAS, Universidad Nacional Autónoma de México, Mexico</i> Associate Lecturer
2014-2015	<i>Universidad de Guanajuato, Mexico</i> Associate Lecturer
2011-2013	<i>CIMAT A.C., Guanajuato, Mexico</i> Postdoctoral position Invited by Juan Carlos PARDO and Víctor RIVERO.
Oct-Dec 2010	<i>Hausdorff Institute for Mathematics, Bonn, Germany</i> Junior Program guest
Feb-Apr 2010	<i>University Johann Wolfgang Goethe, Frankfurt, Germany</i> Postdoctoral position Invited by Anton WAKOLBINGER.
2008-2010	<i>University Paris Dauphine, Paris, France</i> Assistant lecturer.
Jan-Aug 2004	<i>Thalès Communications, Paris, France</i> supervised by Raymond FEST Topic : <i>Filtering theory, applications to tracking.</i>

Education

- 2005–2009 *University Paris Descartes, Paris*
Ph.D. : “Results about genealogies in stochastic population genetics”.
Supervised by Jean-Stéphane DHERSIN, Professor at University Paris-Nord and Jean-Francois DELMAS, Professor at ENPC (Ponts et Chaussées).
Defended on Nov, 26th 2009, awarded with honours.
- 2004–2005 *University Pierre et Marie Curie, Paris*
Diplôme d’Études Approfondies in Applied Probabilities (*Mention Bien*)
equivalent to a Master’s degree, awarded with honours.
- 2001–2004 *University Pierre et Marie Curie, Paris*
Licence de Mathématiques (*Mention Assez Bien*) , equivalent to a Bachelor’s Degree in Mathematics, awarded with honours.
Maîtrise de Mathématiques (*Mention Assez Bien*) , equivalent to a first year of Master in Mathematics, with honours.

Publications and preprints

- The minimal observable clade size of exchangeable coalescents*, F. FREUND, A. SIRI-JÉGOUSSE. Preprint on Arxiv.
- Distinguishing coalescent models-which statistics matter most ?*, F. FREUND, A. SIRI-JÉGOUSSE. Preprint on Biorxiv.
- The symmetric coalescent and Wright-Fisher models with bottlenecks*, A. GONZÁLEZ-CASANOVA, A. SIRI-JÉGOUSSE, V. MIRÓ PINA. Preprint on Arxiv.
- Phase-type distributions in population genetics*, A. HOBOLTH, A. SIRI-JÉGOUSSE, M. BLADT. *Theor. Pop. Biol.* 127 (2019).m 16–32.
- The nested Kingman coalescent : speed of coming down from infinity*, A. BLANCAS-BENÍTEZ, T. ROGERS, J. SCHWEINSBERG, A. SIRI-JÉGOUSSE. *Ann. Appl. Probab.* 29 (2019), no. 3, 1808–1836.
- Trees within trees : simple nested coalescents*, A. BLANCAS-BENÍTEZ, J-J. DUCHAMPS, A. LAMBERT, A. SIRI-JÉGOUSSE. *Elec. J. Probab.* 23 (2018), paper 94, 1–27.
- A note on small-time behaviour of the largest block size of Beta n-coalescents*, A. SIRI-JÉGOUSSE, L. YUAN. XII Symposium on Probability and Stochastic Processes, Progress in Probability, Birkhäuser. 73 (2018), 219–234
- Refracted continuous-state branching processes : self-regulating populations*, A. MURILLO-SALAS, J-L. PÉREZ, A. SIRI-JÉGOUSSE. *Statist. Probab. Lett.* 123 (2017), 34–44.
- Asymptotics of the minimal clade size and related functionals of certain Beta-coalescents*, A. SIRI-JÉGOUSSE, L. YUAN. *Acta Appl. Math.* 142 (2016), 127–148.
- Total internal and external lengths of the Bolthausen-Sznitman coalescent*, G. KERSTING ; J.C. PARDO, A. SIRI-JÉGOUSSE. *J. Appl. Probab.* 51A (2014), Celebrating 50 Years of The Applied Probability Trust, 73–86.
- Minimal clade size in the Bolthausen-Sznitman coalescent*, F. FREUND, A. SIRI-JÉGOUSSE. *J. Appl. Probab.* 51 (2014), 657–668.
- On the length of an external branch in the Beta-coalescent*, J-S DHERSIN, F. FREUND, A. SIRI-JÉGOUSSE, L. YUAN. *Stochastic Process. Appl.* 123 (2013), 1691-1715.

On the two oldest families for the Wright-Fisher process, J-F DELMAS, J-S DHERSIN, A. SIRI-JÉGOUSSE. Electron. J. Probab. 15 (2010), 776–800.

Asymptotic results on the length of coalescent trees, J-F DELMAS, J-S DHERSIN, A. SIRI-JÉGOUSSE. Ann. Appl. Probab. 18 (2008), no. 3, 997–1025.

PhD advisor

2016 AIRAM ASERET BLANCAS BENÍTEZ
Two contributions to the theory of stochastic population dynamics
Co-directed with Víctor Rivero (CIMAT)

Teaching

2012-present **Lectures in Master's degree** (Students in Probability at UNAM and CIMAT) :
Financial mathematics in continuous time.
Stochastic genealogical models and coalescence.
Stochastic processes.
Introduction to real analysis and topology.

2014–2015 **Lectures in Bachelor's degree** (Students in Mathematics, Chemistry and Biology at University of Guanajuato) : Introduction to Probability and Statistics.

Jul 2012 **Minicourse in Summer school in Statistics** (CIMAT) :
Stochastic models for population genetics II.

Mar 2012 **Minicourse in Spring school in Statistics** (CIMAT) :
Stochastic models for population genetics I.

Aug-Dec 2011 **Practicals in Master's degree** (Students in Probability and Statistics at CIMAT) :
Stochastic models.

Nov-Dec 2010 **Lectures in Master's degree** (Students in Economics at ESSEC Business School) :
Statistical inference and estimation.

2009–2010 **Practicals in Bachelor's degree** (2nd year students in Mathematics at University Paris Dauphine) : Probability.

2008–2009 **Practicals in Bachelor's degree** (1st year students in Economics at University Paris Dauphine) : Introduction to Statistics and Probabilities.

2005–2008 **Practicals in Bachelor's degree** (1st and 2nd year students in Mathematics at University Paris Descartes) : Algebra, Analysis, Probabilities, R programming.

Events organization

2014-present **Seminars organizer**

Seminario de Probabilidad y procesos estocásticos, UNAM, Mexico (2016 - present)
Seminario del Departamento de Matemáticas, UG, Mexico (2014 - 2016)
Seminario de Estructuras ramificantes, CIMAT-DEMAT, Mexico (2015)
Seminario de Intercambiabilidad, UNAM, Mexico (2015)
Seminario Obispo, CIMAT-DEMAT, Mexico (2015)
Workshop on Stochastic Population Genetics, France (2008 - 2009)

2015-present **Scientific or local board in events**

Taller nacional de Biología y Probabilidad, UNAM, Mexico (2018 -2019)
XII symposium on Probability and Stochastic Processes, UNAM, Mexico (2017)
Workshop Probabilistic models in Biology, Mexico (2015)

2011-present **Session organizations in events**

IV Encuentro RSME-SMM, Spain (2017)
XI symposium on Probability and Stochastic Processes, Mexico (2013)
35th Conference on Stochastic Processes and their Applications, Mexico (2011)

Languages

French : Mother tongue

English : Good command

Spanish : Good command