Fábio Prates Machado
Curriculum Vitae

Universidade de São Paulo - Brazil
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Current position:

2011-now Universidade de São Paulo, Instituto de Matemática e Estatística - Professor

Other employments:

2002-10 Universidade de São Paulo, Instituto de Matemática e Estatística - Associate Professor

1989/02 Universidade de São Paulo, Instituto de Matemática e Estatística - Assistant Professor

1986 PUC-RS, Instituto de Matemática - Lecturer

Academic leaves of absence:

2010/11 Colorado University at Colorado Springs, Math department - Associate Professor Adjoint

1995/97 Cornell University, Math department - Visiting Scholar

Academic degrees:

Livre docência, Universidade de São Paulo, 2002

Ph.D. in Statistics, Universidade de São Paulo, 1994
Asymptotic results for the branching exclusion model.
Advisor: Pablo Ferrari

Master of Science in Statistics, Universidade de São Paulo, 1989
Large deviations in percolation theory in Z^d for the number of cluster per vertices.
Advisor: Roberto Schonmann

Bachelor of Science in Statistics, Universidade Federal do Rio Grande do Sul, 1984

Current research grant:

2015/19 CNPq research grant 310829/2014-3 PQ-1D.

Administrative services:

2012-15 - Head of the PhD Programme of Instituto de Matemática e Estatística
Universidade de São Paulo - Brazil

Conference Organization and Program Committees:

Coordinator:

VI, XI and XIX Brazilian School of Probability

1st Workshop in Stochastic Modeling

Scientific commitees:

2nd, 3rd and 4th Workshop in Stochastic Modeling - São Paulo-Brazil

20º SINAPE - ABE - João Pessoa-PB (jul 2012).

Special session organizer:

1º Joint Meeting Brazil-Italy in Mathematics - IMPA (Aug 2016)
Stochastic processes in random environment and applications

21º SINAPE - ABE - Natal-RN (Jul 2014).
Probabilidade e Processos Estocásticos

36th SPA - Boulder-CO, EUA (Jun 2013).
Discrete Probability Models in Biology

35th SPA - Oaxaca, Mexico (Jun 2011).
Stochastic survival, growth and evolution modeling

Ph.D. Students supervised:

Set 2016 - Carolina Bueno Grejo
Evolution of species: stochastic models for natural selection through competition and mutation
Capes e CNPq.

Fev 2016 - Alejandro Roldan Correa
Stochastic modeling for dynamics of colonization and collapse - Capes e CNPq.

Out 2010 - Pablo Rodriguez
Generalizations and theorems limits for stochastic models of rumors - Fapesp.

Abr 2010 - Valdivino Vargas Junior
Modeling of epidemics via interacting particle systems - CNPq.

Out 2007 - Alexandre Leichsenring
Limit theorems for an epidemic model on the complete graph - CAPES-CNPq.

Set 2007 - Geraldine Bosco

Exponential rates of convergence in the multidimensional law of large numbers: a constructive approach - CAPES.

Mar 2007 - Mauricio Zuluaga Martinez
Competitive systems of random walks on Z - Fapesp.

Ago 2005 - Élcio Lebensztayn
An upper bound for the critical probabilityvof the frog model on homogeneous trees
Fapesp.

Ago 2001 - Oswaldo S. M. Alves
Phase transition and asymptotic shape for a chain reaction model - CAPES.

Postdoctoral researchers mentored:

2017-now - Achillefs Tzioufas - Capes

2016/2017 - Carolina Bueno Grejo - Capes.

2015/2016 - Valdivino Vargas Junior - Capes.

2013 - Jose Javier Cerda Hernandez - Capes.

2011/2012 - Christophe Gallesco - Fapesp.

2008 - Alexandre Leichsenring - Capes.

2009/2010 - Mauricio Zuluaga Martinez - Fapesp.

2006/2010 - Elcio Lebensztayn - Fapesp, Capes.

Master dissertations supervised:

Abr 2016 - Ivan Costa Bernardo
Interacting particle systems applied to social dynamics: Models of limited confidence - CNPq.

Mar 2013 - Renata Stella Khoury
On a stochastic model for the evolution of a species - CNPq.

Abr 2010 - Fabio Marcellus Lima Sá Makiyama Lopes
Fluid's limit for the random graph of Erdos-Renyi - CNPq.

Abr 2008 - Josivon Souza dos Santos
Simulation of dependent random variables and its applications - CNPq.

Set 2007 - Renato Jacob Gava
Mean-field analysis for an epidemic model via random walks in a graph - CNPq.

Fev 2005 - Iesus Carvalho Diniz
The probabilistic method and de local lemma of Lovãsz - CNPq.

Fev 2003 - Alexandre Leischering

Non-monotonicity of the the critical parameter of the frog model - CNPq.

Jan 2002 - Élcio Lebensztayn
A study of conditions for phase transition in percolation models in general graphs - Fapesp.

Out 2001 - Josué Macario de Figueiredo Rocha
One-dimensional random walk with branching in a k-periodic random media - CNPq.

Publications:

F.P.Machado, A.Roldán-Correa and R.Schinazi. Colonization and Collapse. *ALEA*, 14, 719-731 (2017)

V.Junior, F.Machado and A.Roldán-Correa. Dispersion as a Survival Strategy. *J. Stat. Phys.* 164, n$^{\underline{o}}$ 4, 937-951 (2016).

C.Grejo, F.P.Machado and A.Roldán-Correa. The fitness of the strongest individual on the subcritical GMS model. *Eletronic Communications in Probability*, 21, 12, 1-5 (2016).

E.Lebensztayn, F.Machado and M.Zuluaga. Random walks systems with finite lifetime on *Z Journal of Statistical Physics*, 162 , n$^{\underline{o}}$ 3, 727-738, (2016).

A.Hart, F.P.Machado and H.Matzinger. Information recovery from observations by random walk with exponential tail *Markov Processes and Related Fields*, 21, 939-970, (2015).

V.Junior, F.Machado and M.Zuluaga. The cone percolation on T_d. *Brazilian Journal of Probability and Statistics*, v 28, n$^{\underline{o}}$ 3, 367-375, (2014).

D.Bertacchi, F.Machado and F.Zucca. Local and global survival for nonhomogeneous random walk systems on *Z*. *Advances in Applied Probabilty*, v 46, n$^{\underline{o}}$ 1, 256-278, (2014).

H.Guiol, F.Machado and R.Schinazi. On a link between a species survival time in a evolution model and the Bessel distributions. *Brazilian Journal of Probability and Statistics*, v 27, n$^{\underline{o}}$ 2, 201-209, (2013).

V.V.Junior, F.P.Machado and M.Zuluaga. Rumour Processes on *N*. *Journal of Applied Probability*, v 48, n$^{\underline{o}}$ 3, 201-209, (2011).

H.Guiol, F.P.Machado and R.B.Schinazi. A stochastic model of evolution. *Markov Process and Related Fields*, v 17, n$^{\underline{o}}$ 2, 253-258, (2011).

F.P.Machado, H.Mashurian and H.Matzinger. CLT for the proportion of infected individuals for an epidemic model on a complet graph. *Markov Process and Related Fields*, v 17, n$^{\underline{o}}$ 2, 209-224, (2011).

E.Lebensztayn, F.Machado and P.Rodriguez. Limit theorems for a general stochastic rumour model. *Journal of Applied Mathematics - SIAM*, v 71, n$^{\underline{o}}$ 4, 1476-1486, (2011).

E.Lebensztayn, F.Machado and P.Rodriguez. On the behaviour of a rumour process with random stifling. *Environmental Modelling and Software*, v 26, 517-522, (2011).

E.Lebensztayn, F.Machado and M.Zuluaga. Nonhomogeneous random walks systems on *Z*. *Journal of Applied Probability*, v 47, 562-571, (2010).

G.Bosco, F. Machado and T.Ritchie. Exponential rates of convergence in the ergodic theorem: a constructive approach. *J. Stat. Phys.*, v 139, nº. 3, 367–374, (2010).

T.Kurtz, E.Lebensztayn, A.Leichsenring, F.Machado. Limit Theorems for an epidemic model on the complete graph. *ALEA*, v 4, 45-55, (2008).

E.Lebensztayn, F.Machado and M.Zuluaga. Random walk systems with killing on Z. *Stochastics*, v 80, nº 5, 451-457, (2008).

O.Alves, E.Lebensztayn, F.Machado and M.Zuluaga. Random walk systems on complete graphs. *Bull. Braz. Math. Soc.*, v 37, nº 4, 571-580, (2006).

E.Lebensztayn, F.Machado and M.Zuluaga. Self-avoiding random walks on homogeneous trees. *Markov Processes and Related Fields*, v 12, nº 4, 725-745, (2006).

E.Lebensztayn, F.Machado and S.Popov. An improved upper bound for the critical probability of the frog model on homogeneous trees. *Journal of Statistical Physics*, v 119, nº 1-2, 331-345, (2005).

L.Fontes, F.Machado and A.Sarkar. The critical probability for the frog model is not a monotonic function of $\mathcal{G}$. *Journal of Applied Probability*, 41, nº 1, 292-298 (2004).

F.Machado and S.Popov. Branching random walk in random environment on trees. *Stochastic Processes and their Applications*, 106, nº 1 , 95-106 (2003).

O.Alves, C.Ferreira and F.Machado. Estimates for the spreading velocity of an epidemic model. *Mathematics and Computers in Simulation*, 64, nº 6, p 609-616 (2003).

F.Machado. Percolation on a non-homogeneous Poisson blob process, *Discrete Mathematics and Theoretical Computer Science*, DMTCS Proceedings, 171-172 (2003).

O.Alves, F.Machado and S.Popov. Phase transition for the frog model, *Electronic Journal of Probability*, 7, nº 16 (2002).

O.Alves, F.Machado and S.Popov. The shape theorem for the frog model. *The Annals of Applied Probability*, v 12, nº 2, p 534-547 (2002).

O.Alves, F.Machado, S.Popov and K.Ravishankar. The shape theorem for the frog model with random initial configuration, *Markov Processes and Related Fields*, 7, nº 4, p 525-539 (2001).

F.Machado, M.Menchikov and S.Popov. Recurrence and Transience of Multi Type Branching Random Walks, *Stochastic Processes and their Applications*, 91, nº, nº 1, p 21-37 (2001).

F.Machado and S.Popov. One-dimensional branching random walk in a Markovian random environment, *Journal of Applied Probability*, 37, nº 4, 1157-1163 (2000).

F.Machado, Asymptotic shape for the branching exclusion process, *Markov Processes and Related Fields*, nº 4, 535-548 (1998).

F.Machado, Large deviations for the number of open clusters per site in long range bond percolation, *Markov Processes and Related Fields*, nº 3, p 367-376 (1997).

F.Machado, Branching exclusion process on a strip, *Journal of Statistical Physics* **86**, nº 3/4, 765-777 (1997).