Tomoyuki Ichiba

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Department of Statistics and Applied Probability
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Education

Columbia University, New York.

Ph.D. Statistics, May 2009, supervised by Prof. Ioannis Karatzas in the Department of Statistics and Mathematics.

Dissertation: "Topics in multi-dimensional diffusions: attainability, reflection, ergodicity and rankings"

University of Tokyo, Tokyo.

M.A. Economics, March 2003.

B.S. Economics, March 2001.

Research Fields

Probability Theory and Stochastic Processes

Multi-dimensional reflected diffusions. Elliptic partial differential equations. Bessel processes. Path properties.

Mathematical Economics and Finance

Stochastic Portfolio Theory. Atlas models of equity market. Optimization. Long-range behavior.

Statistics

Time Series analysis. Molecular evolution. Sports statistics.

Teaching Experience

Columbia University

Teaching Fellow - Time Series analysis, Summer 2007. Introduction to Statistics without calculus, Summer 2007 & Fall 2008.

Teaching Assistant in a variety of courses - Introduction to Statistics without calculus, Time Series Analysis, Stochastic Processes and their Applications, Stochastic Methods in Finance, and PhD-level Analysis and Probability I & II.

Tokyo International University

Lecturer - Calculus, from April 2003 to March 2004.

Research

Work in Progress

"Monte-Carlo estimation of diffusion first-passage-time densities" with Constantinos Kardaras.

"Hybrid Atlas model of equity market" with Ioannis Karatzas and Adrian Banner.

"On Fisher Information and relative entropy inequalities for maxima."

Paper Under Review

"On collisions of Brownian particles." with Ioannis Karatzas. arXiv:0810.2149v1.

Published Papers

"Estimating the effect of the red card in soccer: when to commit an offense in exchange for preventing a goal opportunity" *Journal of Quantitative Analysis in Sports* Volume 5, No. 1 / 2009. (with Jan Vecer and Frantisek Kopriva).

"Assessing substitution variation across sites in grass chloroplast DNA." *Journal of Molecular Evolution* Volume 64, No. 6 pp. 605-613 / June, 2007 (with Tian Zheng and Brian Morton) .

"On probabilistic excitement of sports games." *Journal of Quantitative Analysis in Sports* Volume 3, No. 6 / 2007. (with Jan Vecer and Mladen Laudanovic).

"Multi-period statistical risk management methods and equity-linked life insurance." *Journal of the Japan Statistical Society. Japanese issue* Volume 35, No. 2 pp. 103-123. / 2006. (with Naoto Kunitomo).

Invited Talks

Conference Presentations - Stochastic processes and their applications in Finance, Kyoto, March 2008.

Boston University, Febrary 2008. University of Tokyo, December 2007. Quantitative Products Laboratory in Berlin, October 2008. University of Michigan, January 2009.

Professional Activities

Refereeing

Annals of Applied Probability. Electronic Communications in Probability.

Journal of Quantitative Analysis in Sports. Computational Statistics and Data Analysis.

Honors & Awards

Faculty Fellowship, Columbia University, Sep. 2004 - May 2009.
Special Award of Excellence, Department of Economics, University of Tokyo, 2001.

Miscellaneous

Computer Skills

C, C++, FORTRAN, Matlab, Mathematica, R.

Language Skills

Fluency in Japanese. Reading in Russian and French articles.

References

Ioannins Karatzas
Eugene Higgins Professor of Applied Probability
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Jan Vecer
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