

Frank (Fuchang) Gao

MAILING ADDRESS: Department of Mathematics, P.O. Box 441103
University of Idaho
Moscow, ID 83844-1103

PHONE: 208-885-5274

FAX: 208-885-5843

EMAIL: fuchang@uidaho.edu

WEBPAGE: <http://www.webpages.uidaho.edu/~fuchang/>

EDUCATION

Ph.D., Mathematics, 1999, University of Connecticut

M.S., Actuarial Science, 1998, University of Connecticut

EXPERIENCE

6/2005--present Associate Professor. Department of Mathematics, University of Idaho

7/1999--5/2005 Assistant Professor. Department of Mathematics, University of Idaho

9/1994--5/1999 Teaching Assistant. Department of Mathematics, University of Connecticut

9/2004--1/2005 Interdisciplinary Research. Department of Biological Science, University of Idaho

6/2001--8/2001 Research Fellow. The Center of Mathematical Sciences, University of Wisconsin at Madison

COURSES TAUGHT

Survey of Calculus

Calculus I-III

Ordinary Differential Equations

Linear Programming

Numerical Analysis

Stochastic Modeling

Applied Actuarial Science

Advanced Calculus I-II

Actuarial Mathematics

Complex Analysis (Graduate)

Probability Theory (Graduate)

Functional Analysis I-II (Graduate)

SEMINARS ORGANIZED

Interdisciplinary Seminars on Biofilms (Jan., 2004--present)

INVITED PRESENTATIONS IN CONFERENCES

“Small deviation probability estimate via analytic methods,” Joint IMS/CSSP International Conference on Statistics and Probability, Beijing, China. July 2005.

“Riesz product and small deviation of some Gaussian random fields,” Conference on High Dimensional Probability (IV), Santa Fe. June 2005.

- “Small ball probability of Slepian random fields,” AMS Eastern Regional Conference, Probability Session. Newark. April 2005.
- “Geometric quantification via small deviation probability,” Second International Seminar in Probability, Shanghai, China. Sept. 2004.
- “Analytic methods in small deviation probability,” Conference on Gaussian Measures and Geometric Convexity, Snowbird, Utah, July 2004.
- “Biofilm modeling and related stochastic processes,” Fifth International India Statistics Conference, Athens, Georgia, May 2004.
- “Spherical intrinsic volumes and relations with small deviation probabilities,” Mini-workshop on Small Deviation of Stochastic Processes and Related Fields, Oberwolfach, Germany, October 2003.
- “Metric entropy and the spaces of measures,” Thematic Programme on Asymptotic Geometric Analysis, Vancouver, BC, July 2002.
- “Intrinsic volumes of Brownian bridges,” Summer Internship Program in Probability, the Center of Mathematical Sciences, Madison. June 2001.

REFEREED PUBLICATIONS

1. A characterization of random Bloch functions. *J. Math. Anal. Appl.* **252** (2000), No. 2, 959-966.
2. Intrinsic volumes of the Brownian motion body. (With Vitale) *Discrete Comput. Geom.* **26** (2001), No. 1, 41-50.
3. Metric entropy of convex hulls. *Israel J. Math.* **123** (2001), 359-364.
4. Integrated Brownian motions and exact L_2 small balls. (With Hannig and Torcaso) *Ann. Probab.* **31**(2003): 1320-1337.
5. Comparison Theorems for Small Deviations of Random Series. (With Hannig and Torcaso) *Electronic J. Probab.* **8** (2003): paper No. 21. 1-17.
6. The mean of a maximal likelihood estimator associated with Brownian bridges. *Electronic Communications Probab.* **8** (2003): paper No. 1, 1-5.
7. Intrinsic volumes and polar sets in spherical space. (With Hug and Schneider) *Mathematicae Notae. Ano XLI (2001/02)* Vol. **1**. (2003) 159-176.
8. Laplace transforms via Hadamard factorization. (With Hannig, Lee and Torcaso) *Electronic J. Probab.*, **8** (2003): paper No. 13, 1-20.
9. Exact $L(2)$ small balls of Gaussian processes. (With Hannig, Lee and Torcaso) *J. Theor. Probab.* **17**, No. 2 (2004), 503-520.
10. Metric entropy of absolute convex hulls in Hilbert spaces. *Bull. London Math. Soc.* **36** (2004), 460-468.
11. On the combinatorial dimensions. (With Blei) *Random Structure and Algorithm.* **26** (2005), No. 1-2, 146--159.
12. Non-zero boundaries of Leibniz half-space. *Proc. of Amer. Math. Soc.* **133** (2005), No. 6, 1757--1762
13. Small ball probabilities for the Slepian Gaussian fields. (With Li) *Trans. Amer. Math. Soc.* (2005) (To appear)
14. Log-level comparison for small deviation probabilities. (With Li) *J. Theor. Probab.* (2005) (To appear)
15. Metric entropy of monotonic functions. (With Wellner). *J. Multivariate Anal.* (Submitted)
16. Metric entropy of high dimensional distributions and small deviation probability of Brownian sheets. (With Blei and Li). *Annals of Math.* (Submitted)

EXTERNAL GRANTS

Completed

Life at interfaces and the biocomplexity of extreme environments \$9,000,000
National Science Foundation, EPS0132626. (PI: J.Shreeve)
Funding period: February 1, 2002---January 31, 2005.
Role: co-investigator.

Current

Small deviations and geometric quantifications \$84,600
National Science Foundation, DMS0405855.
Funding period: August 1, 2004---July 31, 2007.
Role: PI

INTERNAL GRANTS

Small ball probability of Gaussian random field via Riesz product \$900
University of Idaho Travel Grant
Funding period: June--July 2005
Role: PI

Small deviation and related fields \$900
University of Idaho Travel Grant
Funding period: October 2003
Role: PI

Solid angles and Gaussian processes \$8,000
University of Idaho Seed Grant
Funding period: July 1, 2002--June 30, 2003
Role: PI

ADVISING

Shuomin Wang (M.S. May 2003); Jaimos Skriletz (M.S. May 2004); Xue Zhong (M.S. May 2005); John Bailly (Ph.D. Current)

SERVICES

Internal Services (Committee work)

Colloquium Committee
Course Supervisory Committee
Curriculum Committee
Foreign Language Committee
Graduate Committee
Scholarship Committee
Travel Grant Committee
Physics Department Tenure Committee

External Services (Referee work)

Annals of Probability
Journal D'Analyse Mathematique,
Journal of Environmental Technology
Journal of Mathematical Analysis and Applications
Journal of Mathematical Biology
Journal of Methodology and Computing in Applied Probability