

DEPARTMENT OF MATHEMATICAL ANALYSIS

<http://www.mif.vu.lt/katedros/mak/en>

Head Prof. Vygantas Paulauskas

tel. (370-5)219 30 83

vygantas.paulauskas@mif.vu.lt

2008

Traditionally, the department gives courses in mathematical analysis (calculus) and related subjects. In recent years the department, as responsible for bachelor and master programs in actuarial and financial mathematics, became more oriented towards applications and is offering main courses in actuarial and financial mathematics. The research areas of the department include heavy tailed distributions, time series, econometric and actuarial models, stochastic analysis.

G. Bakštys

Research areas: *Actuarial mathematics*

gintaras.bakstys@mif.vu.lt

P. Banys (PhD student)

Research areas: : limit theorems for random fields

povilas.banys@if.lt

E. Bieliauskienė (PhD student)

Research areas: actuarial mathematics

eugenija@gmail.com

R. Ivanovaitė (PhD student)

Research areas: actuarial mathematics

rasa.ivanovaitė@seesam.lt

A. Juozapavičienė

Research areas: *economics*

A. Juozulynas

Research areas: *limit theorems for stable laws (convergence rates and asymptotic expansions)*

almantas@sintagma.lt

J. Kočetova (PhD student)

Research areas: actuarial mathematics

kocetova@gmail.com

A. Lenkšas

Research areas: *Numerical solution of SDEs.*

sparnai@gmail.com

K. Liubinskas

Research areas: *Convergence rates in limit theorems of probability theory*

kestutis.liubinskas@mif.vu.lt

V. Mackevičius

Research areas: *Stochastic analysis; stochastic numerics*

vigirdas.mackevicius@mif.vu.lt

<http://www.mif.vu.lt/vigirdas>

M. Manstavičius

Research areas: *Levy processes; path properties of random processes*

martynas.manstavicius@mif.vu.lt

E. Misevičius

Research areas: *Mathematical analysis*

V. Paulauskas

Research areas: *approximations of multidimensional stable laws; autoregressive models; random fields; tail index estimation.*

vygantas.paulauskas@mif.vu.lt

A. Plikusas

Research areas: *Sampling in official statistics; regression ratio estimators*

plikusas@ktl.mii.lt

A. Skučaitė

Research areas: *actuarial mathematics, stochastic modeling of insurance processes*

aldona.skucaite@mif.vu.lt

D. Surgailis

Research areas: *Long memory; fractional integration; self-similar processes; financial mathematics*

sdonatas@ktl.mii.lt

R. Zovė (PhD student)

Research areas: *Autoregressive random fields.*

rzove@centras.lt

DOCTORAL THESES

1. **Jurgis Navikas**. Runge--Kutta-type methods for multidimensional stochastic differential equations. Advisor prof. **V. Mackevičius**.
2. **Andrius Klivečka**. The GARCH(1,1) model with random or time-varying coefficients. Advisor prof. **D. Surgailis**.

PUBLICATIONS:**Articles: Journals with ISI Science Citation Index**

1. Baltrūnas, R. Leipus, **J. Šiaulyš**. Precise large deviation results for the total claim amount under subexponential claim sizes // *Statistics & probability letters*. 2008, vol. 78, no. 10, p. 1206-1214. (VU+MII).
2. V. Paulauskas, D. Surgailis. On the rate of approximation in limit theorems for sums of moving averages. *Th. Probab. Appl.*, 52 (2008), 361-370.

Articles: International reviewed journals, books, and ISI proceedings

1. Y. Davydov, V. **Paulauskas**. On estimation of parameters for spatial autoregressive model // *Statistical inference for stochastic processes*. - ISSN 1387-0874. - 2008, vol. 11, no. 3, p. 237-247. - URL: <http://www.springerlink.com/content/nuv15377r57rq52k/fulltext.pdf> (VU+MII)
2. A. Aleškevičienė, R. Leipus, **J. Šiaulyš**. Tail behavior of random sums under consistent variation with applications to the compound renewal risk model // *Extremes*. 2008, vol. 11, no 3, p. 261-279. (VU+MII)

Articles: Lithuanian licensed journals

1. **M. J. Mikalauskas**. Kolmogorovo uždavinys Markovo grandinėms // Lietuvos matematikos rinkinys. - ISSN 0132-2818. - 2008, t. 48-49, p. 407-411. (VU).
2. **A. Juozapavičienė, K. Mickus, G. Mikaliūnas, E. Urbonas**. Analysis of Possible Decisions for Automated Organization Processes // Intelektinė ekonomika. ISSN 1822-8011. – 2008, No. 2 (4), p. 23-33. (VU)

Articles: Other journals and proceedings

1. **J. Šiaulys, G. Stepanauskas**, Poisson distribution for a sum of additive functions on arithmetic progressions, *Annales Universitatis Scientiarum Budapestinensis de Rolando Eötvös Nominatae: Sectio computatorica*. 2008, **29**, 199-212.
2. **J. Šiaulys, G. Stepanauskas**, Some limit laws for strongly additive prime indicators, *Šiauliai mathematical seminar*. 2008, **3**(11), 235-246.

PREPRINTS and TECHNICAL REPORTS 2008

1. V. Mackevičius, On weak approximations of CIR equation with high volatility, Vilnius Univ. Preprint 08-14.

CONFERENCE REPORTS IN 2008

XLIX Conference of Lithuanian Mathematical Society, June 25-26, 2008, Vytautas Magnus University, Kaunas.

1. **V. Mackevičius**, Modeling CIR equation with high volatility.
2. **J. Šiaulys, G. Stepanauskas**, The limit laws of integer valued additive functions.
3. **J. Kočetova**, On the Chain-Ladder method.
4. A. Aleškevičienė, R. Leipus, **J. Šiaulys**, The second order asymptotics for the ruin probability in the case of semiexponential claims.
5. A. Aleškevičienė, R. Leipus, **J. Šiaulys**, The ruin probability asymptotics in the case of regularly varying claims.

Other conference reports

1. **V. Paulauskas**, Beveridge-Nelson decomposition and limit theorems for linear fields // 22nd Nordic Conference on Mathematical Statistics, 16–19 June, 2008, Vilnius, Lithuania : abstracts book. - ISBN 978-9955-879-13-8. - Vilnius, 2008, p. 89.
2. **J. Šiaulys**, On the limit laws for strongly additive prime indicators // Numbers, functions, equations '08 : [conference : books of abstracts], De La Motte Castle, Noszvaj, June 15-21, 2008 : dedicated to the 70th birthday of professors Zoltan Daroczy and Imre Katai. - Noszvaj, 2008, p. p.
3. **V. Paulauskas**, Beveridge-Nelson decomposition and limit theorems for linear random fields The Fifth International Conference on High Dimensional Probability, Lumini , France, 2008.05.26-30
4. **V. Paulauskas**, Peter Jagers and East Europe, Conference in honour of Peter Jagers, Gothenburg, Sweden, 2008.03.26-28

OTHER PUBLICATIONS

1. **V. Paulauskas**, To Professor Donatas Surgailis – 65, Mokslas ir Technika, 2008, 10, 32-33

SCIENTIFIC CONTACTS

Participation in international projects

1. Bilateral Lithuanian-France research program: “Gilibert”, project „**Stochastic Processes and their Application in Statistics, Econometrics and in Industry**“. (17625 Lt). Nr. LNS-12700-719, 2007-05-17, Nr.SUT-441. Prof. V. Paulauskas. 2007–2008.
2. Project BPD2004-ESF-2.5.0-03-05/0007 “Finansų ir draudimo matematikos bei Ekonometrijos magistrantūrų steigimas”, 2006-2008. Projekto vadovas prof. **A.Račkauskas** (V.Paulauskas, V.Mackevičius, K.Liubinskas, A. Skučaitė)
3. Project “Baltic Mobility 2”, sponsored by Estonian Ministry of Education and GERBERT RUF STIFTUNG fund (A. Skučaitė).

VISITS BY STAFF

1. V.Mackevičius, Universities Paris VI--VII, Laboratoire de Probabilités et Modèles Aléatoires, 2008, January 28--February 02.
2. V. Paulauskas, Lille University, France. (Conf. Luminy). 2008, May 25--31.
3. A. Skučaitė. Zurich ETH (2008 06 17-19; 3 days) – part of project “Baltic Mobility 2”, sponsored by Estonian Ministry of Education and GERBERT RUF STIFTUNG fund.

FOREIGN VISITORS

1. Prof. **Youri Davydov**, Lille University, France. 2008, September - September .
2. Prof. **Dalibor Volny**, Rouen universitetas, France, 2008, September - September
3. Prof. **B. Jorgensen**, Denmark, 2008, November 25
4. Prof. **Genadii Samorodnitskii**, Denmark, 2008, November 16 – November 20

GRANTS, AWARDS

1. A. Skučaitė. Grant covering participation fee in 21st Colloquium of Group Consultatif Actuariel Europeen “Solvable Solvency for Pensions?” (Den Haag, Netherlands, 2008 11 21).

Matematinės analizės
katedros vedėjas

prof. V. Paulauskas