13th International Congress on Insurance: Mathematics and Economics (IME2009)

26-29 May 2009, Istanbul, Turkey

<u>Congress Programme</u>

<u>26 May 2009, Tuesday</u>

12:00-18:00 **Registration**

16:00-18:00 **<u>Short Course</u>**

<u>Place:</u> Lapis Hall

- "Use of Run Statistics in Financial Risk Management"
  Serkan Eryılmaz

19:00-20:30 **Welcome Cocktail**

<u>Place:</u> Congress Venue

<u>27 May 2009, Wednesday</u>

08:30-09:30 **Registration**

09:30-11:00 **<u>Opening Session</u>**

<u>Place:</u> Yakut Hall

09:30-10:15 Welcome and Opening Talks

10:15-10:30 Fortis Prize for the Best Paper Presentation in IME2008

10:30-11:00
- "Recent Developments in the Insurance Sector of Turkey"
  Ahmet Genc, Director of the General Directorate of Insurance, Under Secretary of Treasury, Prime Ministry

11:00-11:30 **Tea-Coffee Break**

11:30-12:30 **<u>Invited Talk Session</u>**

<u>Place:</u> Yakut Hall

Chair: Hans Gerber

- "Ruin Theory: An Old Value at Risk or a Timely Concept in Risk Management?"
  Hansjoerg Albrecher

12:30-13:30 **Lunch Break**

13:30-15:00 **<u>Parallel Sessions 1</u>**

<u>Session 1.1:</u> Actuarial Risk Theory 1

<u>Place:</u> Yakut Hall

Chair: Griselda Deelstra

- "On a Dual Model with a Dividend Threshold"
  Cheuk Yin Andrew Ng
- "Optimal Dividends in Finite Time
  Peter Grandits
- "Asymptotic Behavior of the Finite-Time Expected Time-Integrated Negative Part of Some Risk Processes"
  <u>Romain Biard</u>, Stéphane Loisel, Claudio Macci, Noël Veraverbeke
- "On the Expected Penalty Function for a Risk Model Perturbed by Diffusion"
  Zou Wei, <u>Jie-Hua Xie</u>

Session 1.2: Life Insurance 1
Place: Lapis Hall
Chair: Suna Ozyuksel Oksay

- "An Insurer's Problem on Pricing under Distorted Probabilities and Efficient Hedging in an Incomplete Market"
  Masahiko Egami, Hideki Iwaki
- "Approximating the Distribution of Longevity Risk in Life Insurance Products: An Application to Solvency II Regulations "
  Ralph Stevens, Anja De Waegenaere, Bertrand Melenberg
- "Fair Valuation of Life Insurance Liabilities: Integrating Demographic and Market Risk"
  Anna Rita Bacinello, An Chen, Pietro Millossovich
- "A Geostatistical Approach for Dynamic Life Tables: The Effect of Mortality on Remaining Lifetime and Annuitties"
  Ana Debón, Francisco Martínez-Ruiz, Francisco Montes

Session 1.3: Finance and Insurance 1
Place: Firuze Hall
Chair: *Hansjoerg Albrecher*

- "Asymmetric and Leptokurtic Distributions for Modeling Insurance and Financial Data"
  Jackie Li, Uditha Balasooriya, Chan Kee Low
- "Pricing Asian Options and Equity-Indexed Annuities with Regime-Switching by Trinomial Tree Method"
  Fei Lung Yuen, Hailiang Yang
- "Explicit Solutions Of Optimal Investment-Consumption Strategies Under Uncontrollable Liabilities in a Regime-Switch Market"
  Ping Chen, Hailiang Yang, Lin Zhao
- "Utility Maximization under Solvency Constraints and Unhedgeable Risks"
  Torsten Kleinow, Antoon Pelsser

Session 1.4: Economics of Insurance 1
Place: Opal Hall
Chair: *Katrien Antonio*

- "Capital Allocation Using the Bootstrap"
  Jospeh H.T. Kim, Mary Hardy
- "The Distribution of Path-Dependent Options with Applications to Profit Sharing"
  Zhaoning Shang, Koen Van Weert, Marc Goovaerts, Jan Dhaene
- "A New Approach to the Credibility Formula "
  Amir Payandeh
- "Insurance for Good Days or Bad Days?"
  Fuat Erdal

Session 1.5: Dependent Actuarial Risks 1
Place: Turkuaz Hall
Chair: *Jan Dhaene*

- "Upper Comonotonicity"
  Ka Chun Cheung
- "On Some Extensions of the Comonotonicity Coefficient "
  De Schepper Ann, Koch Inge
- "Upper Comonotonicity and Convex Upper Bounds for Sums of Random Variables"
  Jing Dong, Ka Chun Cheung, Hai Liang Yang
- "Rank-Based Estimation of Copula Density by Wavelet Methods"
  Christian Genest, Esterina Masiello, Karine Tribouley

15:00-15:30 **Tea-Coffee Break**

15:30-17:40 **Parallel Sessions 2**

Session 2.1: Ruin Theory 1
Place: Yakut Hall
Chair: *Dimitrios Konstantinides*

- "The Ruin Probability in the Presence of Interest Earnings and Tax Payments"
  Li Wei
- "The Expected Discounted Penalty Function in the Perturbed Risk Processes with Phase-Type Interclaim Times"
  Min Song, Rong Wu, Jiandong Ren
- "A General Class of Ruin-Related Quantities in Sparre Andersen Models"
  Runhuan Feng
- "On The Moments Of The Sparre Anderson Surplus Process And It's Average Value"
  Rovshan Aliyev, Vefa Jafarova
- "Ruin Probabilities for the Erlang(2) Risk Model with Time-Correlated Claims"
  Jie-hua Xie, Wei Zou
- "An Extended Panjer Family of Distributions with Three Parameters"
  Maude Gathy, Claude Lefèvre

Session 2.2: Actuarial Risk Models 1
Place: Lapis Hall
Chair: *Andreas Tsanakas*

- "Developing Stochastic Mortality Models for Internal Assessments"
  Annamaria Olivieri, Ermanno Pitacco
- "Comparing Portfolio Optimization Models With Respect to VaR Values"
  Nuri Celik, Nimet Yapici Pehlivan
- "On the Time to Ruin for Erlang (2) Risk Model in a Markov Environment"
  Cong Gu, Shengong Li, Bo Zhou
- "Does Christophedes' Conjecture Hold for Pricing Under Deductibles?"
  Irini Dimitriyadis
- "Modelling El Niño Dynamics, with Application to Pricing ENSO-Based Index Insurance for Peru"
  Yu-Lieh Huang, Shu-Ling Chen
- "Static Lower Bounds for Multivariate Gaussian Risks"
  Alexander Kukush

Session 2.3: Finance and Insurance 2
Place: Firuze Hall
Chair: *Yilmaz Akdi*

- "The Copula Test Space Problem"
  Michiels Frederik
- "Vanna-Volga Methods Applied to FX Derivatives: From Theory To Market Practice"
  Frederic Bossens, Gregory Rayee, Nikos S. Skantzos, Griselda Deelstra
- "Sorting the registered companies in Tehran Stock Exchange based on multi criteria method (A case study on some registered companies in Tehran Stock)"
  Seyed Reza Alavizadeh, Mahmood Alborzi
- "Two Rationales Behind Buy-And-Hold or Sell-At-Once"
  S.C.P. Yam, S.P. Yung, Wei Zhou
- "Equity Risk and Liability Duration: A Solvency Puzzle"
  Pierre Devolder
- "Parisian Exchange Options"
  An Chen, Michael Suchanecki

Session 2.4: Statistical Methods for Insurance 1
Place: Opal Hall
Chair: Georgios Pitselis

- "Measuring Expectations In Options Markets: An Applicatıon to the S&P500 Index"
  Abel Rodriguez, Enrique ter Horst
- "Comparison of Some Value-at-Risk Estimation Methods for the Two-Parameter Weibull Loss Distributions"
  Omer L. Gebizlioglu, Birdal Senoglu, Yeliz Mert Kantar
- "A New Neural Networks Algorithm for Determining of Total Claim Amounts in Insurance"
  Turkan Erbay Dalkilic, Fatih Tank, Kamile Sanli Kula
- "Credibility and James-Stein Estimators"
  Andrey Kudryavtsev
- "Asymptotic Results for an Insurance Model with Erlang Distributed Interference of Chance"
  Tulay Kesemen
- "Modification of the Chain Ladder Method by Quantile Regression Method"
  Ruslan Abduramanov

Session 2.5: Risk Measuring 1
Place: Turkuaz Hall
Chair: *Antoon Pelsser*

- "Stochastic Comparisons of Risks"
  Felix Belzunce, Jose F. Pinar, Jose M. Ruiz, Miguel A. Sordo
- "On Copula-GARCH-Models for the Estimation of Value-at-Risk and Conditional-Value-at-Risk and Model Selection"
  Gregor Weiß
- "Determination of Risk Pricing Measures From Market prices of Risk"
  Silvia Mayoral, Henryk Gzly
- "TVaR-Based Capital Allocation With Copulas"
  Mathieu Bargès, Hélène Cossette, Etienne Marceau
- "On the Relevance of the Solvency 2 Risk Measure"
  Derien Anthony, Laurent Jean-Paul, Loisel Stéphane
- "On the Tail Mean-Variance Optimal Portfolio Selection"
  Zinoviy Landsman

28 May 2009, Thursday

09:00-10:00 **Invited Talk Session**
Place: Yakut Hall
Chair: Rob Kaas

- "Time-Consistent Risk Measures and Prices in Incomplete Markets"
  Antoon Pelsser

10:00-10:30 **Tea-Coffee Break**

10:30-12:40 **Parallel Sessions 3**

Session 3.1: Pension Funds 1
Place: Yakut Hall
Chair: *Arnold Shapiro*

- "On the Design of Variable-Benefit Pension Schemes"
  Renxiang Dai, Hans Schumacher
- "Realistic Approach of Dynamic Pension Funding Plans""
  Dalia Khalil
- "Conditional Indexation for Pension Funds: Valuation Issue"
  Rosa Cocozza, Angela Gallo, Giuseppe Xella
- "Optimal Investment Strategies and Annuitization Timing Post-Retirement"
  Hong-Chih Huang, Yung-Tsung Li, Yi-Ping Hsu
- "Demographic Assets and the Asset Allocation Problem for Pension Funds"
  Francesco Menoncin
- "Behavioral Optimal Insurance Contract"
  Philip Yam, S.P. Yung, J.H. Zhou

Session 3.2: Ruin Theory 2
Place: Lapis Hall
Chair: Hailiang Yang

- "An Insurance Risk Model With Stochastic Volatility"
  Yichun Chi, Sebastain Jaimungal, Sheldon X. Lin
- "On the Estimation of an Upper Bound for the Ruin Probability for Cox Risk Models"
  Margarida Brito, Ana Freitas
- "Estimates for the Absolute Ruin Probability in the Compound Poisson Risk Model with Credit and Debit Interest""
  Zhu Jinxia, Yang Hailiang
- "The Effect of a Threshold Proportional Reinsurance Strategy on Ruin Probabilities"
  M. Mercè Claramunt, Maite Mármol, Anna Castañer
- "On the Dual Risk Model With Budget Decisions"
  Landriault David, Sendova Kristina
- "The Use of Vector-Valued Martingales in Risk Theory"
  Andrei Budescu, Lothar Breuer

Session 3.3: Statistical Methods for Insurance 2
Place: Firuze Hall
Chair: *Serkan Eryılmaz*

- "Pareto Distribution and Numerical Characteristics of This Distribution Under Uncertainty"
  Turkan Erbay Dalkilic, Tulay Kesemen, Fatih Tank
- "Modelling Diagnosis to Settlement: Critical Illness Insurance Claims"
  Erengul Ozkok, George Streftaris, Howard Waters, David Wilkie
- "On the Extreme Value Copula Analysis for Financial Data"
  Burcu Ucer
- "Copula Parameter Estimation by Maximum-Likelihood and Minimum-Distance Estimators - A Simulation Study"
  Gregor Weiß
- "On the Aging of Two-Component Parallel Systems with FGM Copula Model"
  Burcu Ucer, Selma Gurler
- "An Extension of the Lee-Carter Model for Mortality Projections"
  Shaul Bar-Lev, Udi Makov, Yaser Awad

Session 3.4: Economics of Insurance 2
Place: Opal Hall
Chair: *Roger Laeven*

- "General Stein-Type Decompositions of Covariances with Applications to Insurance and Finance"
  Edward Furman, Ricardas Zitikis
- "Optimal Casualty Insurance and Repair and Regulation in the Presence of a Securities Market"
  An Chen, Philip H. Dybvig
- "On the Suboptimality of Delayed Old-Age Pension Benefit Claiming"
  Lisanne Sanders, Anja De Waegenaere, Theo Nijman
- "Possibilities of Applying Markov Chains in Determining Premium of Property Insurance"
  Ivana Simeunovic, Jelena Minovic
- "A Hierarchical Model for Micro-Level Stochastic Loss Reserving"
  Antonio Katrien, Frees Jed, Emiliano A. Valdez
- "Approximations for Optimal Portfolio Selection Problems"
  Koen Van Weert, Jan Dhaene, Marc Goovaerts

Session 3.5: Finance and Insurance 3
Place: Turkuaz Hall
Chair: Edward Furman

- "Steps Towards A Yield-Macro Model for Actuarial Use"
  Sule Sahin, Andrew J. G. Cairns, Torsten Kleinow, A. David Wilkie
- "Incorporating Risk Aversion and Model Misspecification into Structural Models of Default"
  Sebastian Jaimungal, George Sigloch
- "Moment-Matching Approximation of Asian Basket Option Prices"
  Griselda Deelstra, Ibrahima Diallo, Michèle Vanmaele
- "On Credit and Surrender Risks in Insurance Companies"
  Le Courtois Olivier
- "The Pricing and Hedging of Basket Derivatives Based on the Rank – One Approximation Method"
  Jing Li
- "Price Discovery and Exchange Rate Hedge in Precious Metals Markets"
  Isabel Figuerola-Ferretti, Jesus Gonzalo

12:40-14:00 **Lunch Break**

14:00-15:00 **Invited Talk Session**
Place: Yakut Hall
Chair: Marc Goovaerts

- "Using Micro-Level Automobile Insurance Data for Macro-Effects Inference"
  Emiliano A. Valdez

15:00-15:30 **Tea-Coffee Break**

15:30-17:00 **Parallel Sessions 4**

Session 4.1: Statistical Methods for Insurance 3
Place: Yakut Hall
Chair: *Zinoviy Landsman*

- "Fuzzy Inference to Generalized Pareto Distribution Used in Modelling the Tail of Loss Severity Distribution"
  Tugba Tunc, Duygu İcen, Yasemin Gencturk, Suleyman Gunay
- "A New Mixture Model: Negative Binomial-Gamma Distribution"
  Yasemin Gencturk, Tugba Tunc, Mehmet Mert
- "Investigating Mortality Uncertainty Using the Block Bootstrap"
  W. John Braun, Xiaoming Liu
- "Distance Based Credit Scoring: Estimating Predictors Influence"
  Eva Boj, M. Mercè Claramunt, Anna Esteve, Josep Fortiana

Session 4.2: Risk Measuring 2
Place: Lapis Hall
Chair: *Qihe Tang*

- "Lévy-VaR and Basle Multipliers"
  Le Courtois Olivier, Walter Christian
- "Worst VaR Scenarios With Given Marginals"
  Rob Kaas, Roger Laeven, Roger Nelsen
- "Risk Measures on Sequences"
  Manuel Morales, Hirbod Assa
- "FGM Copula Models for Bivariate Risks"
  Emel Kızılok, Omer L. Gebizlioglu

Session 4.3: Finance and Insurance 4
Place: Firuze Hall
Chair: *David Vyncke*

- "An Application of Comonotonicity in the Interest Rate Derivative Market"
  Kathrin Glau, Nele Vandaele, Michèle Vanmaele
- "Hedging Guaranteed Minimum Income Benefits"
  Claymore Marshall
- "Valuation of Guaranteed Minimum Death Benefit with Ratchet Feature"
  Dorra Guermazi, Fathi Abid
- "Buyer's Quantile Hedge Portfolios in Discrete Time Trading"
  Mustafa C. Pinar

Session 4.4: Claim Reserving
Place: Opal Hall
Chair: Pierre Devolder

- "A Robustification of the Chain-Ladder Method"
  Tim Verdonck, Martine Van Wouwe, Jan Dhaene, Michiel Debruyne
- "Monitoring Mean and Variance of Aggregate Claims Runoff"
  Peter ter Berg
- "Insurance Solvency Under Parameter Uncertainty"
  Russell Gerrard, Andreas Tsanakas
- "Modeling Dependence Between Loss Triangles Using Copulas"
  Piet de Jong

Session 4.5: Life Insurance 2
Place: Turkuaz Hall
Chair: Anna Rita Bacinello

- "Modelling Adult Mortality in Small Populations: The SAINT model"
  Esben Kryger
- "Evauating Fair Premiums of Equity-Linked Policies with Surrender Option in a Bivariate Model"
  Massimo Costabile, Ivar Massabo, Marcellino Gaudenzi, Antonio Zanette
- "Valuation of Equity-Linked Life Insurance Contracts with Flexible Guarantees in a non Gaussian Economy"
  Quittard-Pinon François, Randrianarivony Rivo
- "Ruin Probability and Optimization of the Investment in Life Insurance"
  Makrem Sghairi

17:30-18:00 **Transferring from the Congress Venue to the Boat Quay**

18:00-22:00 **Bosphorous Tour and Congress Dinner on Boat**

29 May 2009, Friday

9:00-10.10 **Parallel Sessions 5**

Session 5.1: Models for Insurance
Place: Yakut Hall
Chair: *Birdal Senoglu*

- "Modelling Dependence in a Ratemaking Procedure Using Bayesian Multivariate Poisson Regression Models"
  Lluis Bermudez, Dimitris Karlis
- "Continuous Time Reserving Claims"
  Faires Hafedh, Makrem Sghairi
- "A Local Likelihood Approach to Graduation of Mortality"
  Julien Tomas, Pascal Schoenmaekers

Session 5.2: Models for Risk and Insurance
Place: Lapis Hall
Chair: *Benjamin Avanzi*

- "An Algebraic Operator Approach to the Analysis of Gerber-Shiu Functions"
  Hansjoerg Albrecher, Corina Constantinescu, Gottlieb Pirsic, Georg *Regensburger, Markus Rosenkranz*
- "On a Multivariate Pareto Distribution"
  Alexandru V. Asimit, Edward Furman, Raluca Vernic
- "Enterprise Risk Management and Disability Insurance"
  Shervin Asadi Gafari

Session 5.3: Finance, Economics and Insurance
Place: Firuze Hall
Chair: Ermano Pitacco

- "Optimal Investment Strategies for an Index-Linked Insurance Payment Process with a Stochastic Intensity"
  Lukasz Delonzg
- "The Analysis of Long Run Relationship Between the Services and Goods Sectors Inflations with Periodogram Based Cointegration Test"
  Yılmaz Akdi, Kıvılcım Metin Ozcan, Koray Kalafatcilar
- "Health Premium Insurance in Recession Economy"
  Edisa Bajraktarevic, Zaim Jatic, Emir Mahmutovic, Nezir Karaibrahimovic, Adnan Bajraktarevic

Session 5.4: Finance and Insurance 5
Place: Opal Hall
Chair: Carmen Ribas

- "Optimal Allocation of Capital in the Insurance Market"
  Xinliang Chen, Jan Dhaene, Marc Goovaerts
- "Non-Constant Discounting and Consumption, Portfolio and Life Inurance Rules"
  Jesus Marin-Solano, Jorge Navas, Oriol Roch
- "A Fuzzy Multiobjective Fractional Goal Programming Approach to Portfolio Selection Problem"
  Nimet Yapıcı Pehlivan, Turan Paksoy, Ching Ter Chang

Session 5.5: Actuarial Risk Models 2
Place: Turkuaz Hall
Chair: Hideki Iwaki

- "A Recursion Formula for Compound Phase-Type Distributions"
  Jiandong Ren
- "VaR for Nonlinear Portfolios with Generalized Exponential Distributions, Risk Factors and DCC"
  Sadefo Kamdem Jules
- "A Contribution to Diversification Effects for Solvency 2"
  Sadefo Kamdem Jules

10:10 – 10:30 **Tea-Coffee Break**
10:30 – 12:00 **Parallel Sessions 6**

Session 6.1: Actuarial Risk Theory 2
Place: Yakut Hall
Chair: Elias Shiu

- "Joint Moments of Discounted Compound Renewal Sums"
  Ghislain Leveille, Franck Adekambi
- "Optimal Reinsurance Under the VaR Criterion"
  Manuel Guerra, Maria de Lourdes Centeno
- "On Dividends Charged by Transaction Costs in the Compound Poisson Risk Model"
  Hansjörg Albrecher, Stefan Thonhauser
- "The Probabilities of Absolute Ruin in the Renewal Risk Model with Constant Force of Compound Interest"
  Dimitrios Konstantinides, Qihe Tang

Session 6.2: Ruin Theory 3
Place: Lapis Hall
Chair: Emiliano A. Valdez

- "Asymptotic Expansion of Compound Distribution Tails for Pareto Distributed Losses"
  Albrecher Hansjörg, Dominik Kortschak
- "On a Multi-Threshold Compound Poisson Process Perturbed by Diffusion"
  Ilie-Radu Mitric, Kristina Sendova, Cary Chi-Liang Tsai
- "Asymptotic Finite-Time Ruin probabilities for a Class of Path-Dependent Claim Amounts Using Poisson Spacings"
  Romain Biard, Claude Lefèvre, Stéphane Loisel, Haikady Nagaraja
- "Uniform Asymptotics for Ruin Probabilities of the Renewal Model with Risky Investments"
  Qihe Tang, Guojing Wang, Kam C. Yuen

Session 6.3: Life Insurance and Pension Funds
Place: Firuze Hall
Chair: Irini Dimitriyadis

- "Construction of Alternative Up To Date Mortality Tables for Developing Countries: Turkey Application"
  Erdem Kırkbesoglu, Serpil Cula
- "The Market Value of Life Insurance Liabilities Under a Regime Switching Process"
  Rosario Monter
- "Altruizm, Life Expectancy and Urban Pension Contribution Rates"
  Zaigui Yang
- "Designing a Minimum Pension Guarantee for the Individual Pension System in Turkey"
  Şule Sahin, Adem Yavuz Elveren

Session 6.4: Pension Funds 2
Place: Opal Hall
Chair: François Quittard-Pinon

- "On the Level of National Retirement Savings with Annuitisation and Cross-Subsidies: A Two-Tiered Economic Model"
  Benjamin Avanzi, Thomas Sachi Purcal
- "What Is It That Make the Swiss Annuitise? A Description of the Swiss Retirement System"
  Benjamin Avanzi
- "Post-Retirement Financial Planning - Strategies and Products"
  Arnold F. Shapiro
- "Modelling and Pricing the Longevity Risk - A Case Study Approach for the Greek Social Security System"
  Alexandros Zimbidis, Athanasios Pantelous

Session 6.5: Dependent Actuarial Risks 2
Place: Turkuaz Hall
Chair: Sheldon X. Lin

- "Measuring Dependence for Aggregating Risks"
  David Vyncke
- "Dependence Structure of Risk Factors and Diversification Effects"
  Chen Zhou
- "Risks Aggregation for Linear Portfolios with Copula"
  Sadefo Kamdem Jules
- "Measuring Tail Dependence for Collateral Losses Using Bivariate Poisson Process"
  Jiwook Jang

12:00 – 12:30 **Closing Session**
Place: Yakut Hall