# Romanian-German Symposium on Mathematics and Its Applications

*May 14-17, 2009, Sibiu, Romania*

The Conference will be held at the Faculty of Sciences, str. Dr. I. Raţiu, no. 5-7

## PROGRAM

## Thursday, May 14th, 2009

09:00–09:45 *Opening Ceremony* (Room B402)

### Plenary Talks (Room B402)

09:45–10:45 **José Antonio Adell** Rates of convergence for the iterates of Cesaro operators

**Coffee** (10:45-11:05)

11:05–11:35 **Frank Kiefer** and **Christian Schaich** DFG Presentation

**Lunch** (13:00-15:00)

15:00–16:00 **Paul Doukhan** Dependence, models and applications

**Coffee** (16:00-16:30)

### Section NA: Numerical Analysis and Approximation Theory (Room A26)

| | | |
|---|---|---|
| 11:45–12:15 | **Ulrich Abel** | The complete asymptotic expansion for multivariate Bernstein-Durrmeyer operators with Jacobi weights and their natural quasi-interpolants |
| 12:15–12:45 | **Ioan Gavrea** | On some Ostrowski type inequalities |
| 16:30–17:00 | **Daniela Roşca** | Adaptive wavelet bases for spherical data compression |
| 17:00–17:30 | **Vasile Miheşan** | On a general class of modified Gamma approximating operators |
| 17:30–18:00 | **Michael Wozniczka** | Simultaneous approximation by uniform Schoenberg splines |

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|---|---|---|
| 18:00–18:30 | **Antonio-Jesús López-Moreno** | Saturation results for simultaneous approximation with Bernstein and Durrmeyer type operators |
| 18:30–19:00 | **Emil Moldoveanu** | On the intrinsic distance in a Dirichlet space and machine learning algorithms |
| 19:00–19:30 | **Ana Maria Acu** | Natural splines of Birkhoff type approximating the solution of differential equations |

## Section SA: Stochastic Analysis in Infinite Dimensions (Room A18)

| | | |
|---|---|---|
| 11:45–12:30 | **Wilfried Grecksch** | Stochastic backward Ito Volterra equations and optimal control theory |
| 16:30–17:15 | **Constantin Tudor** | On the traces of complex Wishart processes |
| 17:25–18:10 | **Gheorghe Bucur** | Natural topology for resistance forms and associated Markov processes |

## Section SD: Stochastic Dependence and Applications to Time Series (Room A17)

| | | |
|---|---|---|
| 16:30–17:15 | **Michael H. Neumann** | Weak dependence from a statistician's perspective |
| 17:25–18:10 | **Anne Leucht** | Degenerate U- and V -type statistics of weakly dependent data: asymptotic theory and bootstrap consistency |

## Section MS: Moduli Spaces in Geometry and Physics (Room A11)

| | | |
|---|---|---|
| 11:45–12:35 | **Ştefan Papadima** | Deformation theory for flat connections and cohomology jump loci |
| 16:30–17:20 | **Johannes Nagel** | On the motive of a conic bundle over a surface |
| 17:30–18:20 | **Răzvan Liţcanu** | Singular Bott-Chern classes and the arithmetic Grothendieck-Riemann-Roch theorem |

## Section NonA & MP: Nonlinear Analysis and Mathematical Physics (Room A12)

| | | |
|---|---|---|
| 11:45–12:15 | **Frank Duzaar** | Parabolic systems with polynomial growth |
| 12:15–12:45 | **Vicenţiu Rădulescu** | Combined effects of singular nonlinearities and variable potentials in elliptic equations |
| 16:30–17:00 | **Liviu Ignat** | Asymptotics for nonlocal evolution equations |
| 17:00–17:30 | **Cristian Bereanu** | Periodic solutions of nonlinear telegraph equations |
| 17:30–18:00 | **Giuseppina Autuori** | Global nonexistence for anisotropic Kirchhoff systems |
| 18:00–18:30 | **Laurian Suciu** | Growth conditions and Cesàro means of higher order |

### Section CI: Computational Intelligence (Room A16)

| | | |
|---|---|---|
| 11:15–12:15 | **Rudolf Kruse** | Mining temporal patterns in industry |
| 16:30–17:30 | **Eyke Hüllermeier** | Fuzzy logic and machine learning |
| 17:30–18:20 | **Bernhard Thalheim** | Towards guided intelligent data analysis and mining |

## Friday, May 15th, 2009

### Plenary Talks (Room B402)

| | | |
|---|---|---|
| 09:00–10:00 | **Hans-Joachim Lenz** | Spreadsheet computation of imprecise and uncertain data |

**Coffee** (10:00-10:20)

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| 10:20–10:50 | **Heiner Gonska** | DAAD Presentation |

**Lunch** (13:00-15:00)

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|---|---|---|
| 15:00–16:00 | **Niels Jacob** | Subordination in the sense of Bochner: a powerful method in analysis and probability theory |

**Coffee** (16:00-16:30)

### Section NA: Numerical Analysis and Approximation Theory (Room A26)

| | | |
|---|---|---|
| 11:00–12:00 | **Vasile Berinde** | Fixed point theorems from a numerical point of view |
| 12:00–12:30 | **Heiner Gonska** | A further sharpening of a theorem by Floater |
| 12:30–13:00 | **Ioana Chiorean** | Remark on the cyclic reduction method |
| 16:30–17:00 | **Jens Krommweh** | Tetrolet transform: a new adaptive Haar wavelet algorithm for sparse image representation |
| 17:00–17:30 | **Alexandru I. Mitrea** | On the unbounded divergence of some operators in the best approximation |
| 17:30–18:00 | **Zoltán Finta** | Approximation by $q$-Bernstein-type operators |
| 18:00–18:30 | **Dana Simian** | Classical and hybrid methods in classification |
| 18:30–19:00 | **Mădălina Păcurar** | A multi-step iterative method for approximating fixed points of Presić-Kannan operators |

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| 19:00–19:30 | **Andrei Vernescu** | A new characterization of the golden number |

## Section SA: Stochastic Analysis in Infinite Dimensions (Room A18)

| | | |
|---|---|---|
| 11:00–11:45 | **Wilhelm Stannat** | Invariant measures for SPDE: new a priori estimates and applications |
| 11:55–12:40 | **Wolfgang König** | The universality classes in the parabolic Anderson model |
| 16:30–17:15 | **Anca Iuliana Bonciocat** | Approximations of some Dirichlet forms on graphs |
| 17:25–18:10 | **Mihai N. Pascu** | A sufficient condition for Chavel's conjecture |

## Section SD: Stochastic Dependence and Applications to Time Series (Room A17)

| | | |
|---|---|---|
| 11:00–11:45 | **Eckhard Liebscher** | Geometric ergodicity and mixing properties of autoregressive models |
| 11:55–12:40 | **Andreas Rudolph** | Stochastic linear autoregressive models and an application to time series models |
| 16:30–17:15 | **Ulrich Herkenrath** | General autoregressive models with I.I.D. and stationary observations |
| 17:25–18:10 | **Marius Iosifescu** | Iterated function systems and the continued fraction expansion |

## Section MS: Moduli Spaces in Geometry and Physics (Room A11)

| | | |
|---|---|---|
| 11:00–11:50 | **Vasile Brînzănescu** | Vector bundles on non-Kaehler Calabi-Yau type 3-folds |
| 12:00–12:50 | **Andrei Neguţ** | Laumon spaces and the Calogero-Sutherland integrable system |
| 16:30–17:20 | **Nicolas Perrin** | Symmetries in the quantum cohomology of homogeneous spaces |
| 17:30–18:20 | **Gianluca Pacienza** | On the geometry of stable base loci of adjoint and anti-adjoint divisors |
| 18:40–19:30 | **Angela Ortega** | Existence results on moduli spaces of coherent systems |

## Section NonA & MP: Nonlinear Analysis and Mathematical Physics (Room A12)

| | | |
|---|---|---|
| 11:00–11:30 | **Irina Nenciu** | On confining potentials and essential self-adjointness for Schroedinger operators on bounded domains |
| 11:30–12:00 | **Stefan Teufel** | The semiclassical model for magnetic Bloch Hamiltonians |
| 12:00–12:30 | **Daniel Grieser** | Quantum graphs, fat graphs and their spectra |
| 16:30–17:00 | **Jakob Wachsmuth** | Effective dynamics for constrained quantum systems |
| 17:00–17:30 | **Max Lein** | Using Weyl calculus in the analysis of magnetic pseudo-differential operators with specific behavior in $x$ |

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| 17:30–18:00 | **Radu Purice** | Functional calculus for magnetic pseudodifferential operators |
| 18:00–18:30 | **Mirela Vinerean-Bernhoff** | Symmetric extensions of normal discrete velocity models |
| 18:30–19:00 | **Niclas Bernhoff** | Nonlinear boundary layers for the discrete Boltzmann equation |

### Section CI: Computational Intelligence (Room A16)

| | | |
|---|---|---|
| 11:00–12:00 | **Denis Enăchescu** | A comparison of two algorithms for outlying records detection in bioequivalence trials |
| 12:00–13:00 | **Thomas Fober** | Evolutionary methods for protein structure comparison |
| 16:30–17:30 | **Alexandru Agapie** | Stochastic analysis of evolutionary algorithms. One look back, one glance ahead |
| 17:30–18:30 | **Denis Enăchescu** | Kernels for in vitro sissolution profile comparison |
| 18:30–19:30 | **Maria Grith** | Shape invariant modelling of the empirical pricing kernel |

## Saturday, May 16th, 2009

### Plenary Talks (Room B402)

| | | |
|---|---|---|
| 09:00–10:00 | **Herbert Lange** | Brill-Noether theory for vector bundles |

**Coffee** (10:00-10:30)

**Lunch** (12:15-14:00)

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|---|---|---|
| 14:00–15:00 | **Wolfgang Reichel** | A-priori bounds for discrete and continuous nonlinear elliptic boundary value problems |

**Coffee** (15:00-15:30)

### Section NA: Numerical Analysis and Approximation Theory (Room A26)

| | | |
|---|---|---|
| 10:30–11:30 | **Margareta Heilmann** | Old and new results on Bernstein-Durrmeyer operators |
| 11:30–12:00 | **Radu Păltănea** | Estimates in weighted spaces of functions |

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|---|---|---|
| 15:30–16:00 | **Ana Marina Ioana Măierean** | On the numerical simulation of a $2D$ fluid-structure interaction problem on carotids |
| 16:00–16:30 | **Maria Daniela Rusu** | True NURBS in approximation theory: an introduction |
| 16:30–17:00 | **Emil C. Popa** | Note on the constants of Landau |
| 17:00–17:30 | **Adrian Branga** | A generalization of some classical quadrature formulas |
| 17:30–18:00 | **Eugen Constantinescu** | Pre-interpolating type quadrature formulas |
| 18:00–18:30 | **Florin Sofonea** | On a linear and positive operator |
| 18:30–19:00 | **Ioan Ţincu** | Some properties from Laguerre polynomials |
| 19:00–19:30 | **Corina Simian** | On a framework for obtaining quadrature formulas |

## Section SA: Stochastic Analysis in Infinite Dimensions (Room A18)

| | | |
|---|---|---|
| 10:30–11:15 | **Tanja Pasurek** | Ergodicity of stochastic dynamics for infinite particle systems |
| 11:30–12:15 | **Hannelore Lisei** | Multiple solutions for nonlinear equations involving Dirichlet forms |
| 15:30–16:15 | **Eugen Popa** | Resolvents of kernels associated with absolutely continuous semigroups |
| 16:25–17:10 | **Lucian Beznea** | Feynman-Kac formula for measures charging no polar set |

## Section SD: Stochastic dependence and applications to time series (Room A17)

| | | |
|---|---|---|
| 10:30–11:15 | **Mioara Buiculescu** | Structure and asymptotic properties of a class of Markov processes |
| 11:25–12:10 | **Aurel Spătaru** | The law of the iterated logarithm for finitely inhomogeneous random walks |

## Section MS: Moduli Spaces in Geometry and Physics (Room A11)

| | | |
|---|---|---|
| 10:30–11:20 | **Paltin Ionescu** | On defective manifolds, a unitary approach |
| 11:30–12:20 | **Günther Trautmann** | Replacing the boundary by vector bundles |
| 15:30–16:20 | **Daniel Matei** | Fundamental groups of smooth quasiprojective varieties |
| 16:30–17:20 | **Gavril Farkas** | The explicit geometry of the spin moduli space |

17:40-18:30 **Round Table on the geometry of moduli spaces**

## Section NonA & MP: Nonlinear Analysis and Mathematical Physics (Room A12)

| | | |
|---|---|---|
| 10:30–11:00 | **Radu Precup** | The Leray-Schauder boundary condition and critical point theory |

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|---|---|---|
| 11:00–11:30 | **Mihai Mihăilescu** | Some eigenvalue problems associated to the Laplace operator |
| 15:30–16:00 | **Alexandru Kristaly** | Elliptic problems on higher-dimensional spheres involving nonlinearities of arbitrary growth |
| 16:00–16:30 | **Csaba Varga** | Multiplicity results for a class of nonhomogeneous Neumann problems |
| 16:30–17:00 | **Nicolae Constantinescu** | Nonlinear elliptic curves cryptanalyze |
| 17:00–17:30 | **Adrian Viorel** | Fixed point theory for the sum of two operators in generalized Banach spaces |
| 17:30–18:00 | **Mirel Cosulschi** | Nonlinear models in analysis of distributed data |

### Section CI: Computational Intelligence (Room A16)

| | | |
|---|---|---|
| 10:30–11:30 | **Raluca Vernic** | Inequalities for the De Pril approximation to the distribution of the number of policies with claims |
| 11:30–12:30 | **Gheorghe Zbăganu** | Absolute optima in portfolio theory |
| 15:30–16:30 | **Ulrich Rendtel** | Benefits from the joint use of survey and administrative data |
| 16:30–17:30 | **Edin Basic** | Different approaches to handle missing data in sample surveys: An example using the German microcensus |
| 17:30–18:30 | **Wolfgang Kössler** | Restrictive adaptive tests |

## Sunday, May 17$^{th}$, 2009

09:00 - 15:00 **Excursion**