

Scientific Program of the Conference

Friday, June 4, 2010

- Opening and Plenary Lectures Session* *Chair: GENO NIKOLOV*
- 8:30 – 9:00 Opening of the Conference
- 9:00 – 9:50 BLAGOVEST SENDOV: Extremal domains associated with a complex polynomial
- 10:00 – 10:50 DIMITAR K. DIMITROV: Zeros of polynomials
- Morning Session A* *Chair: ARTUR SAHAKIAN*
- 11:30 – 11:55 VLADIMIR KOSTOV: On the Schur-Szegő composition of polynomials
- 12:00 – 12:25 PETER DRAGNEV: Asymptotic behavior of Carleman orthogonal polynomials
- Morning Session B* *Chair: KAMEN IVANOV*
- 11:30 – 11:55 MARGARETA HEILMANN: Strong converse results on Baskakov-Durrmeyer operators and their quasi-interpolants
- 12:00 – 12:25 BORISLAV DRAGANOV: On estimating the rate of best trigonometric approximation in L_p by a modulus of smoothness
- Afternoon Session A* *Chair: JÓZSEF SZABADOS*
- 15:00 – 15:25 SZILÁRD RÉVÉSZ: Conjectures and results on the multivariate Bernstein inequality on convex bodies
- 15:30 – 15:55 VITALY MAIOROV: Harmonic analysis and approximation by radial functions
- 16:00 – 16:25 PETER BINEV: Scattered data approximation in high dimensions
- Chair: ALLAN PINKUS*
- 17:00 – 17:25 IONELA MOALE: Min-max polynomials on the ball in several dimensions
- 17:30 – 17:55 STANISLAV VASILYEV: Multidimensional Jackson inequality in mean-square norm
- Afternoon Session B* *Chair: VLADIMIR M. TIKHOMIROV*
- 15:00 – 15:25 LUDMILA NIKOLOVA: On Ψ -direct sums and some inequalities
- 15:30 – 15:55 ÁGOTA P. HORVÁTH: Near-best approximation by a de la Vallée Poussin-type interpolatory operator
- 16:00 – 16:25 FRIEDRICH LITTMANN: Bandlimited onesided approximations to the Gaussian
- Chair: STEFANO DE MARCHI*
- 17:30 – 17:55 ALEXANDER GONCHAROV: Basis in Banach spaces of smooth functions on Cantor-type sets

Saturday, June 5, 2010*Plenary Lectures Session**Chair:* BLAGOVEST SENDOV

- 8:30 – 9:00 Ceremony of conferring Professor Ronald A. DeVore a Foreign Member of the Bulgarian Academy of Sciences
- 9:00 – 9:50 RONALD A. DEVORE: The reduced basis method and greedy algorithms
- 10:00 – 10:50 VLADIMIR M. TIKHOMIROV: Extremal problems in approximation theory and Lagrange principle

*Morning Session A**Chair:* HEINER GONSKA

- 11:30 – 11:55 VITALY ARESTOV: Polynomials that deviate the least from zero in measure and in the uniform norm on compact sets of a given measure and other related problems
- 12:00 – 12:25 ASEN DONTCHEV: Splines with constraints

*Morning Session B**Chair:* RONALD A. DEVORE

- 11:30 – 11:55 STEFANO DE MARCHI: Computing multivariate Fekete and Leja points by numerical linear algebra
- 12:00 – 12:25 GUERGANA PETROVA: On extended cubatures of Turán type for the ball

*Afternoon Session A**Chair:* PETER BINEV

- 15:00 – 15:25 ANDRÁS KROÓ: On Markov, Bernstein and Chebyshev type inequalities for k -monotone polynomials
- 15:30 – 15:55 HEINZ-JOACHIM RACK: A new extremal property of the Chebyshev polynomials: Minimizing pairs of coefficients of bounded polynomials
- 16:00 – 16:25 SERGEI SIDOROV: Relative linear n -widths of sets of differentiable functions

Chair: ALEXANDER GONCHAROV

- 17:00 – 17:25 MOHAMMED A. QAZI: An inequality for self reciprocal polynomials
- 17:30 – 17:55 MARINA DEYKALOVA: Some extremal problems for algebraic polynomials on the Euclidean sphere

*Afternoon Session B**Chair:* GANCHO TACHEV

- 15:00 – 15:25 MARTIN WAGNER: Asymptotic expansions for a Durrmeyer variant of Baskakov and the Meyer-König and Zeller operators and quasi-interpolants
- 15:30 – 15:55 PARVAN PARVANOV: A Goodman-Sharma variant of the Meyer-König and Zeller operators

Chair: GUERGANA PETROVA

- 17:00 – 17:25 ROUMEN ANGUELOV: Locally monotone approximations of real functions on graphs
- 17:30 – 17:55 MARKUS NIESS: Universal phenomena in the complex plane

Sunday, June 6, 2010*Plenary Lectures Session**Chair:* ANDREY S. ANDREEV

- 9:00 – 9:50 QAZI I. RAHMAN: Derivative estimates for meromorphic functions and functions of exponential type
- 10:00 – 10:50 HAKOP HAKOPIAN: On the Gasca-Maeztu conjecture in \mathbb{R}^2 and \mathbb{R}^3

*Morning Session A**Chair:* ANDRÁS KROÓ

- 12:00 – 12:25 GENO NIKOLOV: On the behavior of ultraspherical polynomials in the complex plane

*Morning Session B**Chair:* VITALY MAIOROV

- 11:30 – 11:55 SONGPING ZHOU: What condition can correctly generalize monotonicity in L_1 -convergence of sine series?
- 12:00 – 12:25 MARTIN LIND: On functions of bounded p -variation

*Afternoon Session A**Chair:* SZILÁRD RÉVÉSZ

- 15:00 – 15:25 ARTUR SAHAKIAN: On the double Fourier series of functions of bounded partial Λ -variation
- 15:30 – 15:55 USHANGI GOGINAVA: Strong approximation of two-dimensional Walsh-Fourier series
- 16:00 – 16:25 TEIMURAZ AKHOBADZE: On convergence of trigonometric Fourier series

Chair: MARGARETA HEILMANN

- 17:00 – 17:25 GIVI NADIBAIÐZE: On summability almost everywhere by Cesaro and Abel-Poisson method of series with respect to block-orthonormal systems
- 17:30 – 17:55 ROBERT ALGERVIK: On Fourier-Gagliardo mixed norm spaces
- 18:00 – 18:25 IRINA GEORGIEVA: On interpolation in the unit disk based on Radon projections and function values

*Afternoon Session B**Chair:* ÁGOTA P. HORVÁTH

- 15:00 – 15:25 OGNAN KOUNCHEV: Infinite-dimensional generalization of Kolmogorov-Gelfand theory of widths and applications to compressive sensing
- 15:30 – 15:55 HERMANN RENDER: Bernstein operators for functions in the unit ball of Euclidean space
- 16:00 – 16:25 DIMO DIMOV: Exact performance of (ρ, θ) -Hough transform for star chain images processing

Chair: VLADIMIR KOSTOV

- 17:00 – 17:25 COSTAS KARANIKAS: Boolean invertible matrices identified from two permutations, their corresponding unbalanced Haar matrices and an application to data encryption
- 17:30 – 17:55 NIKOLAOS ATREAS: On a class of local average sampling expansions in subspaces of $L_2(\mathbb{R})$
- 18:00 – 18:25 VASSIL KOLEV: Universal construction of orthogonal double shift functions and applications

Monday, June 7, 2010*Plenary Lectures Session* *Chair:* HAKOP HAKOPIAN

- 9:00 – 9:50 ALEXEI YU. SHADRIN: Landau-Kolmogorov inequality revisited
 10:00 – 10:50 EVGENIJ LIVSHITZ: Greedy algorithms and the best m -term approximation

Morning Session A *Chair:* EVGENIJ LIVSHITZ

- 11:30 – 11:55 DENKA KUTZAROVA: Weak convergence of greedy algorithms in Banach spaces
 12:00 – 12:25 MARKUS HANSEN: m -term approximation in tensor products of Sobolev and Besov spaces

Morning Session B *Chair:* ULRICH ABEL

- 11:30 – 11:55 LOZKO MILEV: Markov interlacing property for exponential polynomials
 12:00 – 12:25 NIKOLA NAIDENOV: Markov type inequalities for oscillating exponential polynomials

Tuesday, June 8, 2010*Plenary Lectures Session* *Chair:* AYTCHO LAZAROV

- 9:00 – 9:50 KAMEN IVANOV: Sub-exponentially localized kernels and frames with applications to numerical analysis
 10:00 – 10:50 GEORGII M. KOBELKOV: Existence of a solution to the 3D primitive equations “in the large”

Morning Session A *Chair:* GEORGII M. KOBELKOV

- 11:30 – 11:55 RAYTCHO LAZAROV: Discontinuous Galerkin finite element method of elliptic problems
 12:00 – 12:25 LUDMIL ZIKATANOV: Some canonical decompositions of discontinuous Galerkin finite element spaces and preconditioning

Morning Session B *Chair:* RUMEN ULUCHEV

- 11:30 – 11:55 KRASSMIRA VLACHKOVA: Error bounds for scattered data interpolation in \mathbb{R}^3 with smooth cubic curve networks
 12:00 – 12:25 GEORGI ILIEV: Difficulties for “best” convex interpolation in \mathbb{R}^3

Afternoon Session A *Chair:* LUDMIL ZIKATANOV

- 15:30 – 15:55 IVAN GEORGIEV: Subspace correction method for discontinuous Galerkin discretizations of linear elasticity equations
 16:00 – 16:25 IVAN HRISTOV: Numerical investigation of fluxon solutions in stacks of Josephson junctions

- Chair:* RUMEN MALEEV
- 17:30 – 17:55 MILKO TAKEV: Modified product cubature formulae with finite differences error representation

Afternoon Session B *Chair: SONGPING ZHOU*

- 15:00 – 15:25 ALEXEY LUKASHOV: Rational functions with fixed poles deviated least from zero on several arcs with zeros belonging to those arcs
- 15:30 – 15:55 RALITZA KOVACHEVA: Zero distribution of sequences of rational functions
- 16:00 – 16:25 KAZUAKI KITAHARA: Functions approximated by any sequence of interpolating generalized polynomials

Chair: ALEXEY LUKASHOV

- 17:00 – 17:25 ANTONIO-JESÚS LÓPEZ-MORENO: Some properties of Durrmeyer modifications of the Meyer-König and Zeller and other composite linear operators
- 17:30 – 17:55 ALEXANDER ALEXANDROV: An inequality of Duffin-Shaffer type

Wednesday, June 9, 2010*Plenary Lectures Session* *Chair: KAMEN IVANOV*

- 9:00 – 9:50 JÓZSEF SZABADOS: Extending and modifying classical operators to the weighted case
- 10:00 – 10:50 ELENA BERDYSHEVA: Bernstein-Durrmeyer operators with arbitrary weight functions

Morning Session A *Chair: ELENA BERDYSHEVA*

- 11:30 – 11:55 HEINER GONSKA: Simultaneous approximation by Bernstein operators in Hölder norms I
- 12:00 – 12:25 GANCHO TACHEV: Simultaneous approximation by Bernstein operators in Hölder norms II
- 12:30 – 12:55 ULRICH ABEL: Old and new results on the Favard operator

Morning Session B *Chair: USHANGI GOGINA*

- 11:30 – 11:55 LUBOMIR T. DECHEVSKY: Smooth convex resolution of unity on general partitions of multidimensional domains using generalized expo-rational B-splines, and application to multivariate approximation and Hermite interpolation on scattered point sets
- 12:00 – 12:25 ANDREY S. ANDREEV: Word image matching based on Hausdorff distances

Open Problems and Closing Session

- 15:00 – 16:30 Open Problems
- 16:30 – 16:45 Closing of the Conference