

Russian Academy of Sciences and Moscow State University

INTERNATIONAL CONFERENCE

**KOLMOGOROV
AND
CONTEMPORARY
MATHEMATICS**

(Moscow State University, June 16–21, 2003)

SCIENTIFIC PROGRAM

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GENERAL PLENARY SESSIONS

JUNE 16, MONDAY

One-Hour Talks (Assembly Hall)

15:15– 16:15	<i>V.I. Arnold</i>	Kolmogorov and natural science
16:30– 17:30	<i>L. Carleson</i>	Kolmogorov and the convergence of Fourier series

JUNE 17, TUESDAY

One-Hour Talks (Culture Hall)

10:00– 11:00	<i>S. Smale</i>	The mathematics of intelligence: dealing with data
11:20– 12:20	<i>S.P. Novikov</i>	Fermi surfaces and dynamics systems

JUNE 18, WEDNESDAY

One-Hour Talks (Culture Hall)

10:00– 11:00	<i>Yu.V. Prokhorov</i>	Randomness and uniform distributions
11:20– 12:20	<i>U. Frisch</i>	Back to the primordial universe by a Monge–Ampere–Kantorovich mass trans- portation method

JUNE 19, THURSDAY

One-Hour Talks (Culture Hall)

14:00– 15:00	<i>J. Palis</i>	A global view of non-conservative dynamics
15:15– 16:15	<i>L.D. Faddeev</i>	Algebraic structures generated by quantum integrable models

JUNE 20, FRIDAY

One-Hour Talks (Culture Hall)

10:00– 11:00	<i>A.G. Vitushkin</i>	The Thirteenth Hilbert problem and some related problems
11:20– 12:20	<i>F. Hirzebruch</i>	Topology and geometry in the work of Kolmogorov

JUNE 21, SATURDAY

One-Hour Talks (Culture Hall)

10:00– 11:00	<i>S.R.S. Varadhan</i>	Large deviations for random walks in a random environment
11:20– 12:20	<i>Ya.G. Sinai</i>	Number-theoretic dynamical systems

Section 1
DYNAMICAL SYSTEMS
AND ERGODIC THEORY

JUNE 17, TUESDAY

45-minute Talks (Auditorium 0–2)

14:00– 14:45	A.B. Katok	Entropy in dynamics: 1958–2003
14:50– 15:35	V.V. Kozlov	The statistical theory of Hamiltonian systems
15:35– 15:50	<i>Break</i>	
15:50– 16:35	A. Douady	Present state of the question of Julia sets of positive measure

20-minute Talks

Dynamical Systems and Ergodic Theory. I (Auditorium 14–14)

17:00– 17:20	N.N. Nekhoroshev	Strong stability of the approximate fundamental mode of the nonlinear string equation
17:20– 17:40	M.B. Sevryuk	“Atropic” invariant tori in Hamiltonian systems
17:40– 18:00	V.V. Basov	Bifurcations of invariant tori
18:00– 18:10	<i>Break</i>	
18:10– 18:30	Yu.N. Bibikov	On the stability of the state of equilibrium of Hamiltonian systems with one or two degrees of freedom

18:30– 18:50	<i>M. Sekiguchi</i>	An extension of homographic solution in the Newtonian N -body problem
18:50– 19:10	<i>Y. Baryshnikov,</i> <i>P. Heider,</i> <i>V. Zharnitsky</i>	To be announced

Dynamical Systems and Ergodic Theory. II (Auditorium 14–15)

17:00– 17:20	<i>R.V. Plykin</i>	Strange attractors of A-cascades
17:20– 17:40	<i>E.V. Zhuzhoma</i>	Diffeomorphisms of 3-manifolds with surface basic sets
17:40– 18:00	<i>R.I. Bogdanov</i>	Non-local integrals for meromorphic potential on the line
18:00– 18:10	<i>Break</i>	
18:10– 18:30	<i>Yu.A. Kordyukov</i>	The Lefschetz trace formula for flows on foliated manifolds
18:30– 18:50	<i>A.Yu. Zhirov</i>	On the algorithmical solution of the problem of topological conjugacy of pseudo-Anosov homeomorphisms
18:30– 18:50	<i>V.Z. Grines</i>	Global scheme of gradient-like diffeomorphisms on three-manifolds

JUNE 18, WEDNESDAY

45-minute Talks (Auditorium 0–2)

14:00– 14:45	<i>M. Ratner</i>	Subgroup actions on homogeneous spaces and applications
14:50– 15:35	<i>R.I. Grigorchuk</i>	The Ihara zeta function for infinite groups and graphs, the KNS spectral measure, and integrable maps
15:35– 15:50	<i>Break</i>	

15:50– *D. Ornstein* An elementary approach to the KAM
16:35 theory

20-minute Talks

Dynamical Systems and Ergodic Theory. I (Auditorium 14–14)

17:00– *M. Blank* Operator approach in ergodic theory of
17:20 systems with neutral singularities and ran-
dom maps

17:20– *A.V. Rozhdest-* On the cohomology equation on a circle
17:40 *vensky*

17:40– *B. Fayad* Mixing real analytic flows with singular
18:00 spectrum

18:00– *Break*
18:10

18:10– *A.V. Kochergin* Mixing of flows on tori
18:30

18:30– *G.S. Chakve-* On stochastic stability of certain
18:50 *tadze* quadratic maps

Dynamical Systems and Ergodic Theory. II (Auditorium 14–15)

17:00– *N.V. Batkhina,* Separatrix splitting in the Hill problem
17:20 *A.B. Batkhin*

17:20– *G.S. Osipenko* Symbolic analysis of dynamical systems
17:40

17:40– *S. Friedland,* Computations of entropy in statistical me-
18:00 *U. Peled* chanics and information

18:00– *Break*
18:10

18:10– *L.S. Efremova* Differential dynamics of skew products of
18:30 interval maps

18:30– 18:50	V.S. Kozyakin	Undefinability of O-minimal structures in the problem of existence of bounded invariant sets for a finite collection of matrices
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JUNE 19, THURSDAY

45-minute Talks (Auditorium 0–2)

9:30– 10:15	G. Margulis	Flows on homogeneous spaces and number theory
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20-minute Talks

Dynamical Systems and Ergodic Theory. I (Auditorium 14–14)

10:30– 10:50	B.M. Gurevich, A.A. Tempelman	Approximation of lattice random fields by Markov fields with application to dimension theory
10:50– 11:10	D. Dolgopiat	To be announced
11:10– 11:30	L.K. Korolov	To be announced
11:30– 11:40	<i>Break</i>	
11:40– 12:00	A. Rybko, S. Shlosman	To be announced
12:00– 12:20	A. Stepin	New progress in the theory of periodic approximations of dynamical systems
12:20– 12:40	A.V. Bulinski	Algebraic and entropic quantum K-systems and associated dynamical semigroups

Dynamical Systems and Ergodic Theory. II (Auditorium 14–15)

10:30– 10:50	V.S. Gonchenko	On bifurcations of reversible systems with time-shift symmetry
10:50– 11:10	E.Ja. Gurevich	On classification of Morse–Smale diffeomorphisms on manifolds of dimensions greater than 3
11:10– 11:30	A.A. Dzhililov	Limit laws of entrance times for critical circle maps
11:30– 11:40	<i>Break</i>	
11:40– 12:00	L.A. Beklarian	On the structure of homeomorphisms groups on the line and on the circle
12:00– 12:20	D.V. Khmelev	Periodic trajectories for homeomorphisms of the circle with break-type singularities
12:20– 12:40	M. Deryabin	Generalized relativistic billiards in external force fields

JUNE 20, FRIDAY

45-minute Talks (Auditorium 0–2)

14:00– 14:45	J. Mather	Action minimizing sets
14:50– 15:35	C. Simó	Upper bounds of the metric entropy for a family of APM diffeomorphisms of S^2
15:35– 15:50	<i>Break</i>	
15:50– 16:35	K.M. Khanin	Renormalization in dynamics

20-minute Talks

Dynamical Systems and Ergodic Theory. I (Auditorium 14–14)

17:00– 17:20	L. Galgani	The Fermi–Pasta–Ulam problem in the thermodynamic limit: numerical and analytical results
17:20– 17:40	S.V. Gonchenko	On symplectic diffeomorphisms with infinitely many generic elliptic periodic orbits
17:40– 18:00	A.G. Kachurovskii	Unification of ergodic and martingale convergence theorems
18:00– 18:10	<i>Break</i>	
18:10– 18:30	A.Ya. Kopanskii	Sternberg–Chen theorem for equivariant Hamiltonian vector fields
18:30– 18:50	O.V. Pochinka	Classification of the simplest nongradient-like diffeomorphisms on three-manifolds

Dynamical Systems and Ergodic Theory. II (Auditorium 14–15)

17:00– 17:20	A. Krasnosel'skii, D. Rachinskii	Nonlocal theorems on Hopf bifurcations
17:20– 17:40	V.S. Medvedev	On manifolds admitting Morse–Smale diffeomorphisms without heteroclinic curves
17:40– 18:00	A.F. Cheviakov	Infinite-dimensional Backlund transformations between isotropic and anisotropic plasma equilibria. Infinite symmetries of anisotropic plasma equilibria
18:00– 18:10	<i>Break</i>	
18:10– 18:30	G.V. Demidenko, I.I. Matveeva	On asymptotic stability of solutions to nonlinear differential equations with periodic linear terms
18:30– 18:50	N.B. Melnikov	Optimal synthesis in a neighbourhood of a singular solution for nonsmooth control problems

JUNE 21, SATURDAY

45-minute Talks (Auditorium 0–2)

14:00– 14:45	<i>A.I. Neistadt</i>	Averaging of perturbations
14:50– 15:35	<i>Ya.B. Pesin</i>	Stable ergodicity and smooth ergodic theory
15:35– 15:50	<i>Break</i>	
15:50– 16:35	<i>A.M. Vershik</i>	Invariant measures and Kolmogorov's effect

20-minute Talks (Auditorium 0–2)

17:00– 17:20	<i>V.A. Dobrinskiy</i>	Lyapunov exponents and stability and bifurcations of chaotic attractor in coupled tent and logistic maps
17:20– 17:40	<i>A.B. Muravnik</i>	On function-theory aspects of quasi-linear stabilization problems
17:40– 18:00	<i>R.J. Brown</i>	Symplectic mapping class actions on surface group character varieties
18:00– 18:10	<i>Break</i>	
18:10– 18:30	<i>G.A. Kamenskii</i>	On smoothing dynamic systems
18:30– 18:50	<i>L. Gadomski, E. Grebenikov, M. Jakubiak, D. Kozak-Skodorodkin</i>	The Lyapunov stability to restricted many body problems
18:50– 19:10	<i>A.A. Karabanov, A.D. Morozov</i>	On degenerate resonances in near-Hamiltonian systems

Section 2
THEORY OF FUNCTIONS
AND FUNCTIONAL ANALYSIS

JUNE 17, TUESDAY

45-minute Talks (Auditorium 16–10)

14:00– 14:45	Z. Ciesielski	Fractal functions, random fields and bases
14:50– 15:35	A. Olevskii	Representation of functions by exponentials with positive frequencies
15:35– 15:50	<i>Break</i>	
15:50– 16:35	S.V. Bochkarev	Everywhere divergent Fourier–Walsh series
16:40– 17:25	S.V. Konyagin	Divergence of trigonometric Fourier series

JUNE 18, WEDNESDAY

45-minute Talks (Auditorium 16–10)

14:00– 14:45	B.H. Sendov	Hausdorff distance and image processing
14:50– 15:35	P. Oswald	Multiscale analysis for subdivision schemes and PDE solvers
15:35– 15:50	<i>Break</i>	
15:50– 16:35	A. Volberg	Removable sets for Lipschitz harmonic functions: analogs of Vitushkin’s conjecture in space

JUNE 19, THURSDAY

45-minute Talks (Auditorium 16–10)

9:30– 10:15	<i>F. Delbaen</i>	Functional analysis and financial mathematics
10:20– 11:05	<i>B.S. Kashin</i>	Orthogonality and geometry of finite-dimensional spaces
11:05– 11:20	<i>Break</i>	
11:20– 12:05	<i>V. Milman</i>	The flavours of asymptotic geometric analysis

JUNE 20, FRIDAY

20-minute Talks

Theory of Functions and Functional Analysis. I (Auditorium 14-03)

14:00– 14:20	<i>V.V. Arestov</i>	To be announced
14:20– 14:40	<i>V.F. Babenko</i>	Inequalities of Kolmogorov type
14:40– 15:00	<i>A.V. Zakharov,</i> <i>A.V. Mikhalev</i>	Riesz–Radon problem of characterization of Radon integrals
15:00– 15:10	<i>Break</i>	
15:10– 15:30	<i>B.I. Golubov</i>	Binary analog of the Tauberian theorem of Wiener and related questions
15:30– 15:50	<i>M.A. Skopina</i>	Ridge expansions of continuous functions on the ball
15:50– 16:10	<i>K.I. Oskolkov</i>	To be announced

16:10–	<i>Break</i>	
16:20		
16:20–	V.N. Temlyakov	To be announced
16:40		
16:40–	R.M. Trigub	Approximation of functions by polynomials with various constraints
17:00		
17:00–	I.G. Tsarkov	Unique solvability in the incorrect nonhomogeneous quasilinear Dirichlet problem
17:20		

Theory of Functions and Functional analysis. II (Auditorium 14-13)

14:00–	V.K. Beloshapka	On the symmetries of the sphere and other similar surfaces
14:20		
14:20–	V.I. Buslaev	On the Baker–Gammer–Wills conjecture in the theory of Padé approximants
14:40		
14:40–	M. Dyukarev	On the Blyashke–Potapov products for the Stieltjes operator-functions
15:00		
15:00–	<i>Break</i>	
15:10		
15:10–	V.V. Napalkov	Various representations of the space of analytic functions and the problem of describing of the dual space
15:30		
15:30–	A.A. Pekarskii	Best uniform rational approximations of functions by orthoprojection
15:50		
15:50–	V.R. Misiuk	Rational approximation of functions with respect to the flat measure
16:10		
16:10–	<i>Break</i>	
16:20		
16:20–	E.D. Nursultanov	To be announced
16:40		

Theory of Functions and Functional analysis. III (Auditorium 16–04)

14:00– 14:20	V.A. Vinokurov, V.A. Sadovnichiy	The main results of the spectral theory for the Sturm–Liouville operator with the potential including δ -functions
14:20– 14:40	E.V. Shchepin	An exponential method of summation of divergent series
14:40– 15:00	Yu.V. Pokornyi, O.M. Penkin, A.V. Borovskikh	On the Poincaré and Harnak inequalities in the space of functions of branching argument
15:00– 15:10	<i>Break</i>	
15:10– 15:30	L. Maligranda	To be announced
15:30– 15:50	G.V. Radzievskii	On the minimal deviations by the root functions of the regular boundary problem
15:50– 16:10	A.A. Tolstonogov	Uniformly G -convergence of non-linear parabolic operators and its application
16:10– 16:20	<i>Break</i>	
16:20– 16:40	V.M. Miklukov, S.S. Polypanov, R.A. Tarapata	To be announced
16:40– 17:00	S.S. Platonov	Generalized Bessel shifts and problems in the theory of approximations of functions
17:00– 17:20	A.M. Bikchentaev	On minimality of the topology of convergence in measure on finite von Neumann algebras

JUNE 21, SATURDAY

45-minute Talks (Auditorium 16–10)

14:00– 14:45	R. De Vore	Analog to digital conversion
14:50– 15:35	N.S. Bakhvalov	A.N. Kolmogorov and optimization of numerical methods
15:35– 15:50	<i>Break</i>	
15:50– 16:35	V.N. Dubinin	Symmetrization of condensers with applications to geometric theory of functions
16:40– 17:25	E. Rakhmanov	Problem of equilibrium in a conducting domain and its applications

Section 3
THEORY OF PROBABILITY
AND MATHEMATICAL STATISTICS

JUNE 17, TUESDAY

45-minute Talks (Auditorium 16–24)

14:00– 14:45	<i>E.B. Dynkin</i>	Superdiffusions and positive solutions of nonlinear partial differential equations
14:50– 15:35	<i>V. Paulauskas</i>	On some problems between probability theory and functional analysis
15:35– 15:50	<i>Break</i>	
15:50– 16:35	<i>F. Götze</i>	Asymptotic distribution of nonlinear statistics

20-minute Talks

Limit Theorems (Auditorium 16–16)

17:00– 17:20	<i>V.V. Ulyanov</i>	On accuracy of approximations for multivariate scale mixtures in statistical applications
17:20– 17:40	<i>A.V. Bulinski</i>	Statistical variant of the CLT for vector-valued random fields
17:40– 18:00	<i>V.Yu. Korolev</i>	On the rate of convergence to the uniform distribution
18:00– 18:10	<i>Break</i>	
18:10– 18:30	<i>V.I. Piterbarg</i>	Extremes of Gaussian fields and applications
18:30– 18:50	<i>I.S. Borisov</i>	Poissonian upper bounds for moments of sums of independent random variables

Stochastic Processes (Auditorium 15–02)

17:00– 17:20	A.A. Novikov, K.A. Borovkov, E.O. Shinjika- shvili	First passage times for Ornstein–Uhlenbeck type processes
17:20– 17:40	M. Jerschow	Causal representations of stochastic processes
17:40– 18:00	A.A. Dorogov- tsev	Stochastic flows and measure-valued processes
18:00– 18:10	<i>Break</i>	
18:10– 18:30	A.M. Kulik	Continuity of the coupling Wasserstein metrics and existence of continuous in probability stochastic flows for Markov processes

Mathematical Statistics (Auditorium 15–03)

17:00– 17:20	Yu.K. Belyaev, V.P. Nosko	Discrete classifiers and subsequent estimators
17:20– 17:40	J.-M. Bardet	Properties and identification of the multi-scale fractional Brownian motion
17:40– 18:00	M.V. Boldin	On sequential processes and tests of Kolmogorov type for autoregressive heteroscedastic models
18:00– 18:10	<i>Break</i>	
18:10– 18:30	Yu.N. Tjurin, T.A. Faliks	Tests for orderings of Bernoulli trials
18:30– 18:50	A.A. Makarov, G.I. Simonova, N.L. Kovba	Using the Kolmogorov–Smirnov statistics in the problems of security of computer networks

Applications (Auditorium 15–04)

17:00– 17:20	<i>A.M. Chebotarev</i>	On nonlinear evolution equations for occupancies under general constraints
17:20– 17:40	<i>O.V. Gulinsky</i>	Asymptotics of Varadhan-type and quantum large deviations
17:40– 18:00	<i>V. Scherbakov, A. Manita</i>	Stochastic particle system with non-local mean-field interaction
18:00– 18:10	<i>Break</i>	
18:10– 18:30	<i>B.A. Zalesky</i>	Extended Ising classifier

JUNE 18, WEDNESDAY

45-minute Talks (Auditorium 16–24)

14:00– 14:45	<i>A.V. Skorokhod</i>	Measure-valued diffusions
14:50– 15:35	<i>L. Accardi</i>	Quantum theory and non Kolmogorovian probabilities
15:35– 15:50	<i>Break</i>	
15:50– 16:35	<i>L. Chen</i>	Variations on a theme of Poisson

20-minute Talks

Limit Theorems and Mathematical Statistics (Auditorium 16–16)

17:00– 17:20	<i>A. Aleškevičiene, V. Statulevičius</i>	Probabilities of large deviations for Markov chains in the approximation by the Poisson law
17:20– 17:40	<i>S.V. Nagaev</i>	On large deviations of self-normalized sum

17:40– 18:00	S.V. Zhulenev	Large deviations: how to perceive them?
18:00– 18:10	<i>Break</i>	
18:10– 18:30	A.Yu. Zaitsev	Estimates of the rate of approximation in the CLT for L_1 -norm of density estimators
18:30– 18:50	T. Shervashidze	On the convergence of densities of the system of sample mixed moments
18:50– 19:10	Q.-M. Shao	A universal self-normalized moderate deviation

Stochastic Processes (Auditorium 15–02)

17:00– 17:20	R. Khasminskii	On averaging principle for two-scaled diffusion processes and conditional central limit theorem. Analytic approach
17:20– 17:40	M. Zähle	Dirichlet forms and Markov processes on fractals
17:40– 18:00	Yu.S. Mishura	Some properties of stochastic differential equations involving fractional Brownian motion
18:00– 18:10	<i>Break</i>	
18:10– 18:30	E. Orsingher	Fractional telegraph equations and compositions of random processes
18:30– 18:50	H. Fujita- Yashima	Stochastic equation of population dynamics
18:50– 19:10	G.P. Yanev, N.M. Yanev	On Kolmogorov approximation in branching processes

General Questions (Auditorium 15–03)

17:00– 17:20	G. Shafer, V. Vovk	The sources of Kolmogorov's Grundbegriffe
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17:20– 17:40	A.Yu. Khrennikov	Quantum interference of probabilities in Kolmogorov probabilistic framework
17:40– 18:00	I. Sonin	On developments generated by a problem of A.N. Kolmogorov in the theory of Markov chains
18:00– 18:10	<i>Break</i>	
18:10– 18:30	D.H. Mushtari	The comparison principle for sums of bounded random variables
18:30– 18:50	A.M. Zubkov	Computing the distribution of sums of random variables using Markov chains
18:50– 19:10	A.O. Vorobiev, O.Yu. Vorobiev	On the new notion of the average set of random events

Applications (Auditorium 15–04)

17:00– 17:20	W.G. Faris	Renormalization group action on polymers
17:20– 17:40	B.L. Granovsky, A.I. Zeifman	On the minimal eigenvalue of the birth-death processes and the respective mean-field models
17:40– 18:00	Yu.P. Virchenko, O.L. Spilinskaya	Random point fields with Markovian refinements and the stochastic geometry of fractally disordered media
18:00– 18:10	<i>Break</i>	
18:10– 18:30	L.G. Afanasieva	Limit distribution for queue with doubly stochastic periodic Poisson arrival process
18:30– 18:50	E.V. Bulinskaya	Limit theorems for a class of stochastic processes and optimization problems
18:50– 19:10	S.F. Yashkov	On sojourn time problem in processor sharing queue

JUNE 19, THURSDAY

45-minute Talks (Auditorium 16–24)

9:30– 10:15	<i>H. Bühlmann</i>	Multidimensional actuarial valuation
10:20– 11:05	<i>E. Eberlein</i>	Application of Lévy models in finance
11:05– 11:20	<i>Break</i>	
11:20– 12:05	<i>P. Embrechts</i>	Ruin, operational risk and time change

JUNE 20, FRIDAY

45-minute Talks (Auditorium 16–24)

14:00– 14:45	<i>S.L. Lauritzen</i>	Graphical models for genetic analyses
14:50– 15:35	<i>B. Øksendal, A. Sulem</i>	Stochastic control of anticipating jump diffusions with partial observation
15:35– 15:50	<i>Break</i>	
15:50– 16:35	<i>V.A. Vatutin</i>	Branching processes in random environment

20-minute Talks

Limit Theorems (Auditorium 16–16)

17:00– 17:20	<i>J. Kawczak, S. Molchanov</i>	Spectrum of the covariance operator for a nilpotent Markov chain
17:20– 17:40	<i>P. Mladenović</i>	On domains of attraction of extreme value distributions

17:40– 18:00	G. Christoph	Scaling by discrete self-decomposable random variables
18:00– 18:10	<i>Break</i>	
18:10– 18:30	P. Doukhan	Weak dependence and its applications
18:30– 18:50	J. Dedecker, C. Prieur	Coupling for τ -dependent random variables and applications
18:50– 19:10	T. Konstantopoulos, A.I. Sakhanenko	On convergence to fractional Brownian motion for weighted random sums

Stochastic Processes (Auditorium 15–02)

17:00– 17:20	A.D. Wentzell	Asymptotic expansions in limit theorems for stochastic processes
17:20– 17:40	Ya.I. Belopolskaya	Probabilistic approach to systems of parabolic equations
17:40– 18:00	H.-J. Engelbert	On uniqueness of solutions to stochastic equations: a counter-example
18:00– 18:10	<i>Break</i>	
18:10– 18:30	H.R. Lerche	Boundary crossing probabilities related to the law of the iterated logarithm
18:30– 18:50	G. Peskir	A change-of-variable formula with local time on curves
18:50– 19:10	P.V. Gapeev	Kolmogorov’s quickest detection problem for diffusion processes

Mathematical Statistics (Auditorium 15–03)

17:00– 17:20	A.L. Rukhin	Balanced randomization designs and classical probability distributions
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17:20– 17:40	A. Fukshansky	Stochastic model for the selection-mutation equilibrium in finite populations
17:40– 18:00	G.M. Feldman	To a characterization of the Gaussian distribution on Abelian groups
18:00– 18:10	<i>Break</i>	
18:10– 18:30	M.B. Malyutov, D.V. Khmelev	A statistical anomaly in the first bi-lines of Shakespeare sonnets
18:30– 18:50	N. Lazrieva, T. Toronjadze	The skew projection technique of a parameter estimation in the presence of nuisance parameters
18:50– 19:10	M.M. Lutsenko, S.G. Maloshevski	Estimates of the parameter of the binomial distribution

Applications (Auditorium 15–04)

17:00– 17:20	A.A. Yushkevich	A multiple optimal stopping problem for Markov chains
17:20– 17:40	E.A. Feinberg	Control of finite continuous-time Markov chains with average rewards and constraints
17:40– 18:00	V.I. Arkin, A.D. Slastnikov	Variational approach for the optimal stopping problem for diffusion processes
18:00– 18:10	<i>Break</i>	
18:10– 18:30	C. Bardos, R. Douady, A. Fursikov	Static hedging of barrier options with a smile: an inverse problem
18:30– 18:50	H. Yang	On joint distribution of surplus immediately before and after ruin
18:50– 19:10	A.S. Cherny, V.P. Maslov	On minimization and maximization of entropy in various disciplines

JUNE 21, SATURDAY

45-minute Talks (Auditorium 16–24)

14:00– **V.P. Maslov** Phase transitions in probability games
14:45

20-minute Talks

Limit Theorems (Auditorium 16–16)

15:10– **Sh.K. Formanov** On nearness of the geometric convolution
15:30 of distributions in the series scheme

15:30– **Yu.S. Khokhlov** The Chover-type of law of iterated loga-
15:50 rithm for weighted sums

15:50– **A.N. Frolov** Universal strong limit theorems for incre-
16:10 ments of random fields

16:10– *Break*
16:20

16:20– **N.G. Gamkre- On a multidimensional local limit theorem
16:40 lidze** for lattice distribution

16:40– **Ya.M. Husanboev,** On the gamma distribution of the stochas-
17:00 **G.M. Rakhimov** tic difference equation

17:00– *Break*
17:10

17:10– **S.Yu. Novak** On self-normalized sums and Student's
17:30 statistic

17:30– **P.S. Ruzankin** The solution of the Monge–Kantorovich
17:50 problem for a certain class of functionals
and application to Poissonian approxima-
tion

Stochastic Processes (Auditorium 15–02)

15:10– **O.G. Smolyanov** Surface Wiener measures on trajectories
15:30 in Riemannian manifolds and applications

15:30– 15:50	O.V. Seleznev	Wavelet and spline approximation and simulation of Gaussian processes
15:50– 16:10	E.B. Yarovaya	About limit theorems for branching symmetric random walk on \mathbf{Z}^d
16:10– 16:20	<i>Break</i>	
16:20– 16:40	B.P. Harlamov	Stochastic integral along the trace of a diffusion process
16:40– 17:00	A.S. Cherny, M.A. Urusov	On the absolute continuity and singularity of probability measures on a filtered probability space
17:00– 17:10	<i>Break</i>	
17:10– 17:30	O.V. Viskov	Inertial Brownian motion and ordered potentials
17:30– 17:50	A.V. Lebedev	Generalized maximal branching processes with heavy tails

Mathematical Statistics (Auditorium 15–03)

15:10– 15:30	E. Nadaraya, R. Absava	Limit distribution of the mean square deviation of the Gasser–Müller nonparametric estimate of the regression function
15:30– 15:50	V.E. Bening, V.Yu. Korolev	The Student distribution as an asymptotic approximation in statistics
15:50– 16:10	D. McNeil, N. Kordzakhia, N. Chirtkiatsakul	Stochastic volatility via Gaussian autoregression
16:10– 16:20	<i>Break</i>	
16:20– 16:40	V. Zaiats	Estimation of the response function under random sampling

16:40– 17:00	M. Ermakov	On large and moderate deviations probabilities of empirical bootstrap measure
17:00– 17:10	<i>Break</i>	
17:10– 17:30	N.K. Bakirov	Mean-square trend
17:30– 17:50	I.N. Volodin S.V. Simushkin	The Bayes concept of p -value: d -posterior approach to the problem

Applications (Auditorium 15–04)

15:10– 15:30	G. di Nunno	On monotone extension of linear operators with application to finance
15:30– 15:50	M. Mania, R. Tevzadze	Semimartingale backward PDE and imperfect hedging
15:50– 16:10	V.N. Tutubalin	Comparison of some Kolmogorov's concepts with approaches of modern financial mathematics
16:10– 16:20	<i>Break</i>	
16:20– 16:40	A.N. Chuprunov, O.V. Rusakov	Invariance principle with replacements defined by events of the occupation theory and its applications in financial mathematics

Section 4
MATHEMATICAL LOGIC
AND THEORY OF COMPLEXITY

JUNE 17, TUESDAY

45-minute Talks (Auditorium 13–11)

14:00– 14:45	<i>D. van Dalen</i>	Kolmogorov and Brouwer on constructive implication and the ex falso rule
14:50– 15:35	<i>P. Martin-Löf</i>	Can classical mathematics be interpreted constructively?
15:35– 15:50	<i>Break</i>	
15:50– 16:35	<i>S.N. Artemov</i>	Kolmogorov and Gödel on intuitionistic logic: recent developments
16:40– 17:25	<i>L. Levin</i>	Unsolvability and problems with multiple solutions

JUNE 18, WEDNESDAY

45-minute Talks (Auditorium 13–11)

14:00– 14:45	<i>Yu.L. Ershov</i>	Theory of numberings
14:50– 15:35	<i>O.B. Lupanov</i>	A.N. Kolmogorov and mathematical theory of schemes complexity
15:35– 15:50	<i>Break</i>	
15:50– 16:35	<i>Yu. Gurevich</i>	From Kolmogorov machines to abstract states machines
16:40– 17:25	<i>L.D. Beklemishev</i>	Independent combinatorial principles and provability algebras

JUNE 19, THURSDAY

20-minute Talks (Auditorium 13–11)

9:30– 9:50	<i>A. Drago</i>	Kolmogorov and the relevance of the double negation law in science
9:50– 10:10	<i>S.M. Ermakov</i>	On comparative complexity of some stochastic and deterministic algorithms
10:10– 10:30	<i>O.E. Trofimov</i>	About recursively enumerable chaos
10:30– 10:40	<i>Break</i>	
10:40– 11:00	<i>M.V. Volkov</i>	Piecewise testable languages of a given height and identities of monoids of reflexive relations
11:00– 11:20	<i>A.A. Shum</i>	Semantic systems
11:20– 11:40	<i>I.A. Gorbunov</i>	Solvable extension of the logic of provability, not solvable “in finite”
11:40– 11:50	<i>Break</i>	
11:50– 12:10	<i>O.V. Kamozina</i>	Algebraic lattices of Fitting classes
12:10– 12:30	<i>A.N. Frolov</i>	Ershov algebras with a computable copy

JUNE 20, FRIDAY

45-minute Talks (Auditorium 13–11)

14:00– 14:45	<i>Yu.V. Matiyasevich</i>	Diophantine version of Kolmogorov complexity
14:50– 15:35	<i>P. Vitanyi</i>	Kolmogorov’s structure functions with an application to the foundations of model selection

15:35– 15:50	<i>Break</i>	
15:50– 16:35	A.A. Muchnik, A.L. Semenov	40 years of the origin of Kolmogorov randomness theory
16:40– 17:25	A. Shen, N.K. Vereshchagin	Kolmogorov interpretation of intuitionistic logic and Kolmogorov complexity

JUNE 21, SATURDAY

20-minute Talks (Auditorium 13–11)

14:00– 14:20	M.M. Arslanov	Degrees of fixed-free functions and barely Σ_2^0 -degrees
14:20– 14:40	V.B. Alekseev	On the complexity of recognition of S -expressibility of K -valued logics
14:40– 15:00	V.G. Kanovei, V.A. Lyubetsky	On the existence of definable non-regular sets of reals
15:00– 15:10	<i>Break</i>	
15:10– 15:30	V.K. Zakharov, P.V. Andreev, E.I. Bunina, A.V. Mikhalev	MacLane’s problem on foundations of category theory and local theory of sets
15:30– 15:50	Hayato Takahashi	Redundancy of universal coding, Kolmogorov complexity, and Hausdorff dimension
15:50– 16:10	M.V. Patlasov, V.E. Plisko	Diagnostic formulas for intuitionistic and minimal propositional calculi

16:10– 16:20	<i>Break</i>	
16:20– 16:40	<i>A.E. Romash- chenko</i>	Information inequalities: Shannon and Kolmogorov approaches
16:40– 17:00	<i>T.J. Stepien</i>	On the scope of the structural completeness in the functional calculi with identity
17:00– 17:20	<i>M.N. Rybakov, A.V. Chagrov</i>	On the complexity of modal logics possessing a provable interpretation with limitations on the number of variables

Section 5

TURBULENCE AND HYDRODYNAMICS

JUNE 17, TUESDAY

45-minute Talks (Auditorium 6–11)

- | | | |
|-----------------|------------------------|---|
| 14:00–
14:45 | G.I. Barenblatt | Turbulent boundary layers at very high Reynolds numbers |
| 14:50–
15:35 | G.S. Golitsyn | Kolmogorov ideas for turbulence in other areas of hydrodynamics, geophysics, and astrophysics |
| 15:35–
15:50 | <i>Break</i> | |
| 15:50–
16:35 | V. Zakharov | Kolmogorov spectra in weak turbulence |

20-minute Talks (Auditorium 6–11)

- | | | |
|-----------------|---|---|
| 17:00–
17:20 | S.Ya. Gertsens-
stein | Hydrodynamic turbulence in solutions of Navier–Stokes equations |
| 17:20–
17:40 | V.I. Klyatskin | Coherent phenomena in stochastic transport of passive tracer by random hydrodynamic flows |
| 17:40–
18:00 | F.V. Dolzhan-
skii, V.M. Pono-
marev | On mechanical prototypes of fundamental hydrodynamical invariants and slow manifolds |
| 18:00–
18:10 | <i>Break</i> | |
| 18:10–
18:30 | V.A. Vladimirov | Virial equalities in fluid dynamics |
| 18:30–
18:50 | V.L. Zimont | Kolmogorov method and turbulence combustion modeling |
| 18:50–
19:10 | Shepakina,
Sobolev | To be announced |

JUNE 18, WEDNESDAY

45-minute Talks (Auditorium 6–11)

- 14:00– *A.L. Shnirelman* To be announced
14:45
- 14:50– *V.I. Yudovich* Cosymmetry and its application in fluid
15:35 dynamics
- 15:35– *Break*
15:50
- 15:50– *O.E. Barndorff-Nielsen* Lévy-based tempo-spatial modeling; with
16:35 application to turbulence

20-minute Talks (Auditorium 6–11)

- 17:00– *L.I. Piterbarg* Lyapunov exponents for stochastic flows
17:20 modeling upper ocean turbulence
- 17:20– *A. Sobolevskĭ,* A variational approach to the Burgers tur-
17:40 *K. Khanin,* bulence in an unbounded domain
D. Khmelev
- 17:40– *M.D. Missarov* To be announced
18:00
- 18:00– *Break*
18:10
- 18:10– *Yu.E. Gliklikh* A certain probabilistic Lagrangian ap-
18:30 proach to non-stochastic viscous hydro-
dynamics

JUNE 19, THURSDAY

45-minute Talks (Auditorium 6–11)

- 9:30– *B.L. Rozovsky* Stochastic Navier–Stokes equations: prop-
10:15 agation of chaos and statistical moments

20-minute Talks (Auditorium 6–11)

- 10:30– **Yu. Chashechkin**, Mathematical modelling of free turbulent
10:50 **G.G. Chernykh**, flows
N.P. Moshkin,
O.F. Voropaeva,
A.G. Demenkov,
B.B. Ilyushin,
V.A. Kostomakha
- 10:50– **A.V. Zakharov** To be announced
11:10
- 11:10– **A.M. Blokhin**, Stability of flow with a strong shock
11:30 **D.L. Tkachev** around an infinite wedge
- 11:30– *Break*
11:40
- 11:40– **S.V. Ershov**, Seismo-hydro-electromagnetic tsunami
12:00 **I.B. Mikhaylovskaya**, wave
O.B. Novik
- 12:00– **M.V. Semenov**, Investigation of gas flows round a ball on
12:20 **Yu.V. Sheretov** the base of quasi-hydrodynamic equations
in Stokes approximation
- 12:20– **A.Yu. Plakhov** The Newton problem on the minimal re-
12:40 sistance in the class of bodies of fixed volume

JUNE 20, FRIDAY

45-minute Talks (Auditorium 6–11)

- 14:00– **M.I. Vishik** Global attractor for nonautonomous 2D
14:45 Navier-Stokes system with rapidly oscillating forcing term
- 14:50– **S.B. Kuksin** Ergodic theorems in 2D statistical hydro-
15:35 dynamics

20-minute Talks (Auditorium 6–11)

16:00– 16:20	S.I. Cherny- shenko	Organized structures in the near-wall turbulence and generalized optimal perturbations
16:20– 16:40	A.N. Golubiat- nikov	On a phenomenological model of turbulent flows
16:40– 17:00	V.N. Grebenev	Invariant manifolds in parametric turbulent models
17:00– 17:10	<i>Break</i>	
17:10– 17:30	G.V. Alexeev, D.A. Tereshko	Analysis of inverse extremal problems for stationary equations of heat and mass transfer in viscous fluid
17:30– 17:50	S.I. Khudyaev	Self-organization in the flow of structured fluid
17:50– 18:10	A.S. Demidov	Evolution of perturbation of a circle in the Stokes–Leibenson problem for the Hele–Shaw flow

JUNE 21, SATURDAY

45-minute Talks (Auditorium 6–11)

14:00– 14:45	J. Mattingly	Mixing and scale in stochastically forced Navier–Stokes equations
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20-minute Talks (Auditorium 6–11)

15:10– 15:30	E. Juntasaro, V. Juntasaro	On the new concept of turbulence modeling in fully-developed turbulent channel flow
15:30– 15:50	G.A. Kuz'min, O.N. Soboleva	The Kolmogorov refined scaling in the theories of turbulence and in subsurface hydrodynamics

15:50– 16:10	A.A. Agrachev, A.V. Sarychev	On controllability of the Navier–Stokes equation by low modes forcing
16:10– 16:20	<i>Break</i>	
16:20– 16:40	I.V. Biktasheva, V.N. Biktashev	On a wave-particle dualism of spiral waves dynamics
16:40– 17:00	V.L. Natyaganov	Electro-capillar-vortical model and imaginary paradoxes of the globe-lighting
17:00– 17:20	D. Georgievskii	Development of the integral relations method in hydrodynamical stability
17:20– 17:30	<i>Break</i>	
17:30– 17:50	O.A. Alduchov, V.A. Gordin	3D correlation functions of meteorological fields. Methods and results

Section 6
GEOMETRY AND TOPOLOGY

JUNE 17, TUESDAY

45-minute Talks (Auditorium 14-08)

- | | | |
|---------------|-------------------------------|--|
| 14:00– | <i>B.A. Dubrovin</i> | On algebraic Frobenius manifolds |
| 14:45 | | |
| 14:50– | <i>Y.M. Eliashberg</i> | Symplectic field theory and its applications |
| 15:35 | | |
| 15:35– | <i>Break</i> | |
| 15:50 | | |
| 15:50– | <i>A.B. Givental</i> | Symplectic geometry of Frobenius structures |
| 16:35 | | |

20-minute Talks

Geometry, Topology, and Singularity Theory (Auditorium 14-02)

- | | | |
|---------------|-----------------------------|---|
| 17:00– | <i>A.V. Pajitnov</i> | Morse–Novikov number for knots and links |
| 17:20 | | |
| 17:20– | <i>N. Saveliev</i> | Rokhlin invariant and gauge theory |
| 17:40 | | |
| 17:40– | <i>R.R. Sadykov</i> | Elimination of singularities of smooth mappings of 4-manifolds into 3-manifolds |
| 18:00 | | |
| 18:00– | <i>Break</i> | |
| 18:10 | | |
| 18:10– | <i>S. Terzic</i> | The topology of gauge groups and of spaces of connections |
| 18:30 | | |

Applications of Geometry and Topology (Auditorium 14–03)

- 17:00– **I.S. Krasilshchik**, Nonlocal Hamiltonian, symplectic and re-
17:20 **A.M. Verbovetsky**, cursion structures for $N = 1$ supersym-
P.H.M. Kersten metric KDV equation
- 17:20– **S.A. Igonin** Coverings and the fundamental group in
17:40 the category of differential equations
- 17:40– **O.I. Mokhov** Compatible nonlocal Poisson brackets of
18:00 hydrodynamic type: local Riemannian ge-
ometry and integrability
- 18:00– *Break*
18:10
- 18:10– **V.A. Gorkaviy** Bianchi transformation of surfaces in E^4
18:30

JUNE 18, WEDNESDAY

45-minute Talks (Auditorium 14–08)

- 14:00– **A.A. Bolibrukh** The universal inverse monodromy
14:45 problem
- 14:50– **B.A. Khesin** Evolution equations on the Virasoro
15:35 group: geometry and integrability
- 15:35– *Break*
15:50
- 15:50– **I.M. Krichever** Integrable chains on algebraic curves
16:35

20-minute Talks

Geometry, Topology, and Singularity Theory (Auditorium 14–02)

- 17:00– **L.A. Bokut**, Rewriting systems for the braid groups \mathcal{B}_3
17:20 **A.Yu. Vesnin** and \mathcal{B}_4 with Gorin–Lin generators

17:20– 17:40	A.S. Dzhumadil'- daev	New multiplications on a space of vector fields
17:40– 18:00	V.L. Dol'nikov	Some generalizations of transversal theorems
18:00– 18:10	<i>Break</i>	
18:10– 18:30	K. Rybnikov	On locally convex piecewise-linear surfaces

Applications of Geometry and Topology (Auditorium 14–03)

17:00– 17:20	V.S. Kulikov	Braid monodromy invariants of generic coverings of the plane
17:20– 17:40	O.K. Sheinman	Lie algebras and Riemann surfaces: new aspects
17:40– 18:00	S.V. Shadrin	Hurwitz numbers and intersections on the moduli spaces of curves
18:00– 18:10	<i>Break</i>	
18:10– 18:30	V.A. Golubeva	Analytic functionals and hyperbolic equations
18:30– 18:50	M.A. Akivis, V.V. Goldberg, V.V. Lychagin	Linearizability criterion for a d -web in the plane with applications

JUNE 19, THURSDAY

45-minute Talks (Auditorium 14–08)

9:30– 10:15	V.M. Buchstaber	Kolmogorov, cohomology and cobordisms
10:20– 11:05	I.A. Dynnikov	New approaches to knot theory

11:05– *Break*
 11:20
 11:20– **E.G. Rees** Rings of continuous functions and symmetric products
 12:05

20-minute Talks (Auditorium 14–08)

12:20– **A. Sergeev** Adiabatic limit of the Seiberg–Witten equations on the symplectic 4-manifolds
 12:40

JUNE 20, FRIDAY

45-minute Talks (Auditorium 14–08)

14:00– **V.M. Kharlamov** Welschinger invariant and enumeration of real rational plane curves
 14:45
 14:50– **A.G. Khovanskii** Topological version of the Galois theory
 15:35
 15:35– *Break*
 15:50
 15:50– **V.A. Vassiliev** Geometry of discriminants and classical homotopy topology
 16:35

20-minute Talks

Geometry, Topology, and Singularity Theory (Auditorium 14–02)

17:00– **Yu.V. Muranov** Surgery exact sequence and splitting problem
 17:20
 17:20– **A.V. Zhubr** On normal homotopy classification of 6-manifolds
 17:40
 17:40– **R. Herrera** The topology and geometry of quaternionic manifolds via the elliptic genus
 18:00
 18:00– *Break*
 18:10

18:10– *K.E. Feldman* Complex cobordism and symplectomorphism group
18:30

Applications of Geometry and Topology (Auditorium 14–03)

17:00– *V.S. Kulikov* Braid monodromy invariants of generic coverings of the plain
17:20

17:20– *V.D. Sedykh* Topology of singularities of stable corank 1 smooth mappings
17:40

17:40– *P.N. Ivanshin* On certain operator algebras on the groupoid of the foliation
18:00

18:00– *Break*
18:10

18:10– *M.B. Mishustin* Neighborhoods of complex submanifolds and small numerators for small denominators
18:30

18:30– *R.A. Sharipov* Newtonian dynamical systems admitting normal shift in geometry of generalized Legendre transformation
18:50

JUNE 21, SATURDAY

45-minute Talks (Auditorium 14–08)

14:00– *D. Burago* On partially hyperbolic diffeomorphisms of 3-manifolds
14:45

14:50– *Yu.S. Ilyashenko* Persistence problems for complex foliations and Kupka–Smale property for Henon maps
15:35

15:35– *Break*
15:50

15:50– *I.A. Taimanov* Integrability and nonintegrability of geodesic flows
16:35

20-minute Talks

Geometry, Topology, and Singularity Theory (Auditorium 14–02)

17:00– 17:20	P. Akhmetiev	To be announced
17:20– 17:40	V.M. Nezhinskij	Singular links of the type $(S^1; S^1; S^1 \vee S^1)$
17:40– 18:00	V.V. Balashchenko	Invariant structures on generalized symmetric spaces
18:00– 18:10	<i>Break</i>	
18:10– 18:30	A.B. Skopenkov	A new invariant of higher-dimensional embeddings
18:30– 18:50	V.A. Kurlin	Kolmogorov–Arnold’s solution of Hilbert’s 13th problem and basic embeddings of graphs

Applications of Geometry and Topology (Auditorium 14–03)

17:00– 17:20	A.Yu. Savin	Elliptic operators on manifolds with singularities and k-homology
17:20– 17:40	B.Yu. Sternin	Elliptic operators on manifolds with edges
17:40– 18:00	Yu.A. Aminov	On two-dimensional surfaces in E^4
18:00– 18:10	<i>Break</i>	
18:10– 18:30	V.S. Kalnitskii	Symmetries of plane geodesic flows of affine connectedness