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Conference program
„The theory of functions, theory of operators and quantum information theory"

(01-03 June 2023, Ufa, Russia)

01 June (UUST)

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Ufa time (MSK + 2)

10.20 - 10.30. Conference opening (Conference Hall, 2nd floor)

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Plenary talks

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Chair: I.Kh. Musin

10.30 - 11.10. A.G. Sergeev (Steklov Mathematical Institute). *BB-correspondence in solid state theory.*

11.15 - 11.55. S.R. Nasyrov (Kazan Federal University). *Distortion of conformal moduli under stretching of the region.*

12.00 - 12.15. Coffee break.

12.15 - 12.55. F.G. Avkhadiev (Kazan Federal University). *Criteria for the Positivity of Constants in Hardy and Rellich Type Inequalities.* (o)

13.00 - 14.30. Break.

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Complex analysis, methods of complex analysis in operator theory, function theory
(Lecture Hall 502)

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Chair: A.B. Sukhov.

14.30 - 15.10. V.V. Kapustin (St. Petersburg Department of Steklov Mathematical Institute). *The Riemann Xi-function, the de Branges space and Bessel functions.*

15.15 - 15.55. A.V. Domrin (Lomonosov Moscow State University). *On the global meromorphy of dressing chain solutions.*

16.00 - 16.15. Coffee break.

Chair: I.Kh. Musin

16.15 - 16.55. N.A. Rautian (Lomonosov Moscow State University). *Studying of Volterra integro-differential equations by methods of spectral analysis and semigroup theory.*

17.00 - 17.40. I.R. Kayumov (Kazan Federal University). *On Smale's conjecture for critical values of polynomials.* (o)

17.45 - 18.05. D.M. Hammatova (Kazan Federal University). *On the proof of Smale's dual conjecture for critical values of polynomials of degree 7.*

Quantum probability and quantum information theory (Conference Hall, 2nd floor)

Chair: B.O. Volkov

14.30 - 14.55. V.Zh. Sakbaev (Keldysh Institute of Applied Mathematics). *Spaces of functions integrable by finite additive invariant measures and representations of groups.*

15.00 - 15.25. L.S. Efremova (Lobachevsky State University). *On the geometric property of smooth cylinder maps close in the C^1-norm to skew products and its dynamical applications.*

15.30 - 15.55. V.A. Glazatov (Moscow Institute of Physics and Technology). *The Koopman representation of Hamiltonian flows in infinite dimensional spaces with invariant measure.*

16.00 - 16.15. Coffee break.

Chair: V.Zh. Sakbaev

16.15 - 16.40. B.O. Volkov (Moscow Institute of Physics and Technology). *Higher order traps in quantum control landscapes.*

16.45 - 17.05. R.Sh. Kalmetev (Keldysh Institute of Applied Mathematics). *Approximation of solutions for evolution equations by Feynman-Chernoff iterations.*

17.10 - 17.35. M.A. Elovenkova (Moscow Institute of Physics and Technology). *Control landscape of measurement-assisted transition probability for a three-level quantum system with dynamical symmetry.*

17.40 - 18.05. V.N. Petruhanov (Steklov Mathematical Institute). *Gradient optimization and exact dynamics for two-level open quantum systems driven by coherent and incoherent controls.*

02 June (UUST)

Complex analysis, methods of complex analysis in operator theory, function theory
(Lecture Hall 502)

Chair: B.N. Khabibullin.

10.00 - 10.40. S.N. Melikhov (Southern Federal University). *Polystellar regions and the Duhamel product.*

10.45 - 11.05. O.A. Ivanova (Southern Federal University). *On the algebra of Hadamard operators on a closed unit polydisk.*

11.10 - 11.30. R.G. Nasibullin (Kazan Federal University). *Geometry of one-dimensional and spatial inequalities of Hardy type.*

11.35 - 11.55. N.F. Abuzyarova (Institute of Mathematics with Computing Centre, Ufa). *Lower Bounds for Entire Functions from Special Classes.*

12.00 - 12.20. R.A. Gaisin (Institute of Mathematics with Computing Centre, Ufa). *Nontriviality of the Siddiqui class.*

12.25 - 12.40. Coffee break.

Quantum probability and quantum information theory (Conference Hall, 2nd floor)

Chair: G.G. Amosov

10.30 - 10.55. A.E. Rastegin (Irkutsk State University). *Uncertainty relations in terms of generalized entropies from information diagrams.* (o)

11.00 - 11.25. A.D. Kodukhov (Steklov Mathematical Institute). *Entanglement as a resource for ensemble coherence and mutual information.* (o)

11.30 - 11.55. A.E. Teretenkov (Steklov Mathematical Institute). *Master equations for composite open quantum systems.* (o)

12.00 - 12.25. O.V. Morzhin. (Steklov Mathematical Institute) *On optimization of coherent and incoherent controls in one- and two-qubit open systems.* (o)

12.30 - 12.40. Coffee break.

Plenary talks (Conference Hall, 2nd floor)

Chair: A.G. Sergeev.

12.40 - 13.20. A.S. Holevo (Steklov Mathematical Institute). *Statistical structure of quantum theory and quantum information.* (o)

13.25 - 14.05. A.N. Pechen (Steklov Mathematical Institute). *Incoherent control of open quantum systems.* (o)

14.10 - 14.50. A.D. Baranov (St.Petersburg State University). *Spaces of Cauchy transforms and localization of zeros.* (o)

Complex analysis, methods of complex analysis in operator theory, function theory (Lecture Hall 502)

Chair: A.D. Baranov (o)

15.20 - 15.50 P.A. Mozolyako (St. Petersburg State University). *Weighted Hardy Type Embeddings on Graphs.* (o)

15.55 - 16.25 T.G. Batenev (St. Petersburg State University). *Representing Systems of Reproducing Kernels in Spaces of Analytic Functions.* (o)

16.30 - 17.10. A.V. Abanin (Southern Federal University). *Topological properties of classical operators in weighted spaces of holomorphic functions.* (o)

Quantum probability and quantum information theory (Conference Hall, 2nd floor)

Chair: A.N. Pechen (o)

16.00 - 16.25 S.A. Kuznetsov (Moscow Institute of Physics and Technology). *Controllability of some closed quantum systems.* (o)

16.30 - 16.55 A.A. Miachkova (Moscow Institute of Physics and Technology). *Analysis of traps in quantum control landscapes using gradient methods.* (o)

17.00 - 17.25 N.S. Fedorets (Moscow Institute of Physics and Technology). *Machine learning of quantum control landscapes.* (o)

17.30 - 18.05 J. Gough (Aberystwyth University). *Time-inhomogeneous Quantum Markov Processes and Instantaneous Lindblad Generators.* (o)

03 June (UUST)

Complex analysis, methods of complex analysis in operator theory, function theory
(Lecture Hall 502)

Co-Chairs: B.N. Khabibullin, V.V. Napalkov.

10.00 - 10.20. E. A. Lopatin (Steklov International Mathematical Center). *On the application of the methods of potential theory on compact Riemann surfaces to the description of the weak asymptotic behavior of Hermite-Padé polynomials.* (o)

10.25 - 10.45. V. V. Napalkov (Institute of Mathematics with Computing Centre, Ufa), A. A. Nuyatov (National Research Lobachevsky State University of Nizhny Novgorod). *Traces of functions from the BargmannB–Fock space on von Neumann lattices.*

10.50 -11.10. Ya. N. Aliyev (ADA University, Azerbaijan). *Singularities of the root space of the Sturm-Liouville problem in the case when the spectral parameter enters the boundary condition linearly or quadratically.* (o)

11.15 - 11.35. Abdelhamid Rehouma (University of Hama Lakhdar of Eloued Algeria). *New set of orthogonal polynomials: linear combinations of Chebyshev polynomials of different kinds.* (o)

Quantum probability and quantum information theory (Conference Hall, 2nd floor)

Chair: G.G. Amosov, R.N. Gumerov.

11.00 - 11.25 A.A. Imomov (Karshi State University). *On the Laplace method for functions of large numbers: some improvements.* (o)

11.30 - 11.55 S.N. Popova (High School of Economy). *On Kantorovich' non-linear tasks of optimal measure transport.* (o)

12.00 - 12.25 S.V. Grishin (Moscow Institute of Physics and Technology). *Random walks on a line and algebraic curves.*

12.30 - 12.45. Coffee break.

Chair: G.G. Amosov, R.N. Gumerov.

12.45 - 13.05. G.G. Amosov (Steklov Mathematical Insitute). *On constructing of informationally complete operator-valued measures.*

13.10 - 13.35. R.N. Gumerov (Kazan Federal University). *On C*-algebra and *-polynomial relations.*

13.40 - 14.05. V.I. Yashin (Steklov Mathematical institute). *Extensions of conditionally completely positive maps between operator systems.*

14.10 - 14.35. E.V. Lipacheva (Kazan State Power Engineering University). *On semigroup C^*-algebra generated by a semidirect product of semigroups.* (o)

14.40 - 16.00. Break.

Chair: V.I. Yashin

16.00 - 16.25. A.O. Alekseyev (Moscow Institute of Physics and Technology). *Extension of the family of projections to a positive operator-valued measure and restoration of the quantum state after measurement.*

16.30 - 16.55. L.A. Ryskin (Moscow Institute of Physics and Technology). *Covariance requirement for calculating the capacity of quantum channels introduced by projective unitary irreducible representations of finite groups.*

17.00 - 17.25. R.L. Khazhin (Kazan Federal University). *On generating channels.*