

1. LIST OF PUBLICATIONS OF PROF. DR. FARRUKH MUKHAMEDOV

1.1. Books.

- (1) ACCARDI, L. MUKHAMEDOV F., AL RAWASHDEH A. (Eds.) *Infinite Dimensional Analysis, Quantum Probability and Applications*, Springer Proceedings in Math. & Statist. Vol. 390, Springer, 2022.
- (2) MUKHAMEDOV F., GANIKHODJAEV N., *Quantum Quadratic Operators and Processes*, Lect. Notes Math. Vol. **2133**, Springer, 2015.
- (3) MUKHAMEDOV, F. GANIKHODJAEV N., SABUROV M. (Eds.) *Recent Achievements in Dynamical Systems, Proc. Dep. Comput. & Theor. Sci., Faculty of Science, IIUM*, Vol. 2, IIUM Press, 2011, 260 p.
- (4) GANIKHODJAEV N., MUKHAMEDOV, F., PAH C.H.(Eds) *Investigation in Pure mathematics, finance mathematics and optics. Proc. Dep. Comput. & Theor. Sci., Faculty of Science, IIUM*, Vol.1, IIUM Press, 2011, 245 p.
- (5) GANIKHODJAEV N., MUKHAMEDOV, F., PAH C.H. *Lattice Models with Competing Interactions*, IIUM Press, 2011.
- (6) GANIKHODJAEV N.N., MUKHAMEDOV F.M. *The Theory of Real functions*, Textbook, National Univ. Uzbekistan Press, Tashkent, 2003, 179 p (Uzbek).

Published Refereed journals	# 289
1.2. List of Publications. Papers in Conference Proceedings (Scopus Indexed)	#31
Chapter in Books & Proceedings	#38

1.3. Submitted papers.

- (1) Goginava U., Mukhamedov F., Limits of sequences of operators associated with Walsh System, (submitted).
- (2) Mukhamedov F., Jamilov U., Historical Behavior of Lotka-Volterra operators: p-Stein-Ulam maps, (submitted).
- (3) Qaisar T., Mukhamedov, F., El Khatib Y., Hasan M., Quadratic stochastic processes associated with SIR model, (submitted).
- (4) Mukhamedova F., Goginava U., Wheeldon, J., Mukhamedov F., Robust FFT-based Quasi Monte Carlo method for pricing American barrier options, (submitted).
- (5) Dhahri, A., Ko Ch.K., Mukhamedov, F., Yoo H.J., Potential theory for quantum random walks associated with transition operation matrices, (submitted).
- (6) Goginava U., Mukhamedov F., Convergence in Measure of Tensor Product Operators via One-Dimensional Weighted Lebesgue Functions in the Walsh-Paley Setting, (submitted).
- (7) Mukhamedov F., Akin H., Exact Solution for the Three State Hybrid-Potts Model on a Cayley Tree: Gibbs Measures, Free Energy, and Lyapunov Spectra, (submitted).
- (8) Mukhamedov F., Khakimov O., Periodic p-adic Gibbs measures for the Ising Model on (2,3)-Ary Trees, (submitted).
- (9) Qawasmeh A., Mukhamedov F., Phase Transition in the Ising Model with Competing Interactions on (m, k) -Ary Trees, (submitted).
- (10) Mukhamedov F., Qaralleh I., On Quantum Genetic Algebras and Their Properties, (submitted).
- (11) Mukhamedov F., Syam S.M., Qaralleh I., Automorphisms of a class of quantum genetic Lotka-Volterra algebras, (submitted).

- (12) Goginava U., Mukhamedov F., Weak-Type Inequalities for Maximal Operators Associated with Sequences on Bounded Vilenkin Groups, (submitted).
- (13) Mukhamedova F., Tyukin, I., Mukhamedov F., Orbit-based universal approximation via hypercyclicity on compact open topology, (submitted).
- (14) Alaali A., Mukhamedov F., Khakimov O., Quantum XY model on a (1,3)-ary tree: nonlinear boundary recursion, absence of phase transitions, and clustering, (submitted).
- (15) Qaralleh I., Mukhamedov F., Khakimov O., Rota-Baxter operators of nilpotent evolution algebras with maximal nilindex, (submitted).

1.4. Refereed journals.

• Accepted papers

2026

- (289) Azman, A., Wan Rozali, W.N.F.A., Mukhamedov, F. The Dynamics of Non-homogeneous Markov Chains Associated with the b-bistochastic Quadratic Stochastic Operators on 1-dimensional Simplex, *Malaysian J. Fund. Appl. Sci.* **25**(2026).
- (288) EMBONG A.F., MUKHAMEDOV, F., Dynamics of Infinite Dimensional Lotka-Volterra operators, *J. Dynamics Diff Eqs.* (2026)
- (287) GOGINAVA U., MUKHAMEDOV F. Lebesgue Constant and almost everywhere Convergence of Walsh-Fourier Series, *Russian Math. Surv.* (2026)
- (286) GOGINAVA U., MUKHAMEDOV F., NAGY, K., On Approximation of Tensor Products Operators Sequences Associated with Walsh-Paley System, *J. Fourier Anal. Appl.* **32**(2026), Article 9.

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- (285) MUKHAMEDOV F., GOGINAVA U., GOGINAVA A., WHEELDON, J., Remarks on Numerical Approximation of Volterra Integral Equations by Walsh-Hadamard transform, *Results Appl. Math.* **28**(2025), 100648.
- (284) AL ZADJALI H., MUKHAMEDOV, F., Unital Kadison-Schwartz maps, *Open Syst. & Inform. Dyn.* **32**(2025), 2550007.
- (283) QAISAR T., MUKHAMEDOV, F., HASAN M., AMIN M.S., Genetic Algebras associated the SIR model, *AppliedMath* **5**(2025), 111.
- (282) AKIN H., MUKHAMEDOV F., 3-state hybrid Potts-SOS model with different coupling constants and its phase transition phenomenon, *Phys. Scr.* **100** (2025), 085201.
- (281) MUKHAMEDOV F., PAH CH. H., ROSLI A., Ergodicity of Replicator equation with Historic Behavior perturbation, *Qualit. Theor. Dyn. Sys.* **24**(2025), no. 4, Article 173.
- (280) SYAM, S. M., ABUOMAR, M., SYAM, M.I., MUKHAMEDOV, F. A modified operational matrix method for investigating the dynamics fractional Lotka-Volterra type model, *J. Nonlin. Convex Anal.* **26**(2025), 1095-1114.
- (279) GOGINAVA U., MEMIC N., MUKHAMEDOV F., Maximal Operators Associated with Walsh-Paley Systems on Dyadic Hardy Spaces, *Math. Methods Appl. Math.* **48**(2025), no. 9, 9770-9777.
- (278) QAWASMEH A., MUKHAMEDOV, F., KHAKIMOV O., On Gibbs measures of the Ising Model on (k, m) -Ary trees, *Rev. Math. Phys.* **36**(2025), no. 5, 2450042.
- (277) QAWASMEH A., MUKHAMEDOV, F., AKIN H., Analysis of Gibbs measures and stability of dynamical system linked to $(1, 1/2)$ -mixed Ising model on (m, k) -ary trees, *Math. Phys. Anal. Geom.* **28**(2025), no. 2, article 10.

- (276) MUKHAMEDOVA F., MUKHAMEDOV F., Stability and robustness of kinetochore dynamics under sudden perturbations and stochastic influences, *Sci. Reports.* **15**(2025), 14883.
- (275) GOGINAVA U., MUKHAMEDOV F., Limits of sequence of Tensor Product Operators associated with the Walsh-Paley system, *J. Geom. Anal.* **35**(2025), no. 5, Article 165.
- (274) GOGINAVA U., MUKHAMEDOV F., On problems of the Divergence of logarithmic means of Fourier series, *Proc. Amer. Math. Soc.* **153**(2025), no. 6, 2555-2564.
- (273) ALI ALAALI, MUKHAMEDOV, F., Mixed quantum Ising–XY Model on a Cayley Tree of Order Two, *Euro. Phys. J. B* **98**(2025), 58.
- (272) ERKURŞUN-ÖZCAN N., MUKHAMEDOV F., On uniform zero-two law for positive contractions of abstract state spaces, *Positivity* **29**(2025), 18.
- (271) ERKURŞUN-ÖZCAN N., MUKHAMEDOV F., Residualities and uniform ergodicities of Markov semigroups, *Ann. Funct. Anal.* **16**(2025), no. 1, 6.

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- (270) MUKHAMEDOV F., PAH CH. H., ROSLI A., Bijective class of replicator equations, *Math. Notes* **116**(2024), no. 5, 1072-1079.
- (269) MUKHAMEDOV F., JAMILOV U., MUKHAMEDOVA, F., SOUISSI A., Dynamics of nonlinear stochastic operators and associated Markov measures, *Math. Methods Appl. Sci.* **47**(2024), 13300-13312.
- (268) MUKHAMEDOV F., JAMILOV U., IBRAGIMOV M., Genetic algebras associated with permuted Lotka-Volterra operators, *Commun. Algebra* **52**(2024), No. 12, 5224-5240.
- (267) KHAKIMOV O., MUKHAMEDOV, F. On set of p-adic Gibbs measures for the countable state 1D SOS model, *J. Phys. A: Math. Theor.* **57** (2024), 435202.
- (266) ACCARDI, L., EL GHETEB S., SOUISSI, A., RHAIMA, M., MUKHAMEDOV, F., MUKHAMEDOVA F. Structure of Backward quantum Markov chains, *AIMS Math.* **9**(2024), no. 10, 2804428057.
- (265) SOUISSI A., MUKHAMEDOV F., EL GHETEB S., RHAIMA M., MUKHAMEDOVA F., Entangled Hidden Elephant Random Walk Model, *Chaos, Solitons & Fractals* **186** (2024), 115252.
- (264) QARALLEH I., MUKHAMEDOV, F., Local derivations and Rota-Baxter operators of Quantum Lotka-Volterra Algebras on $M_2(\mathbb{C})$, *Gulf J. Math* **17**(2024), 239-260.
- (263) MUKHAMEDOV F., KHAKIMOV O., QARALLEH I., On $\exp(Der(E))$ of nilpotent evolution algebras of maximal nilindex, *Linear Multilinear Alg.* **72**(2024), no. 14, 2379-2390.
- (262) CHRUSCINSKI, D., KIMURA, G., MUKHAMEDOV, F., Universal constraint for relaxation rates of semigroups of qubit Schwarz maps, *J. Phys. A: Math. Theor.* **57** (2024) 185302.
- (261) GOGINAVA U., MUKHAMEDOV F., Uniform boundedness of sequence of operators associated with Walsh system and their pointwise convergence, *J. Fourier Anal. Appl.* **30**(2024), 24
- (260) SOUISSI A., MUKHAMEDOV F., Nonlinear stochastic operators and associated inhomogeneous entangled quantum Markov chains, *J. Nonlinear Math. Phys.* **31**(2024), 11.
- (259) AKIN H., MUKHAMEDOV F., The extremality of disordered phases for the mixed spin-(1,1/2) Ising model on Cayley tree of arbitrary order, *J. Stat. Mech.* (2024), 013207.
- (258) GANIEV I., MUKHAMEDOV F., The “zero-two” law in the Orlicz-Kantorovich spaces, *Algebra Universalis* **85**(2024), Article 8.
- (257) MUKHAMEDOV F., PAH CH. H., ROSLI A., On a convex combination of Lotka-Volterra operators, *Examples and Counterexamples* **5**(2024), 100133.
- (256) JAMILOV U., MUKHAMEDOV F., Takens’ the last problem and Stein-Ulam Spiral Type Maps, *J. Math. Anal. Appl.* **531**(2024), 127813.

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- (254) SOUISSI A., HAMDI T., MUKHAMEDOV F., ANDOLSI A., On the structure of quantum Markov chains on Cayley trees associated with open quantum random walks, *Axioms* **12**(2023), no. 9, 864.
- (253) MUKHAMEDOV F., KHAKIMOV O., Absolute continuity of non-homogeneous Gibbs measures of the Ising model on the Cayley tree, *Nonlinearity* **36**(2023), no.10, 5265.
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- (247) MUKHAMEDOV F., EMBONG A.F., Lyapunov functions and dynamics of infinite dimensional Volterra operators, *Chaos, Solitons & Fractals* **173**(2023), 113625.
- (246) MUKHAMEDOV F., QARALLAH I., QAISAR T., HASAN M.A., Genetic algebras associated with $\xi^{(a)}$ -quadratic stochastic operators, *Entropy* **25** (2023), no. 6, Article 934.
- (245) MUKHAMEDOV F., RAHMATULLAEV M., EGAMOV D., On periodic ground states of the Ising model with mixed spins and competing interactions on the Cayley tree, *Rep. Math. Phys.* **91**(2023), no. 3, 379-393.
- (244) MUKHAMEDOV F., SOUISSI A., HAMDI T., ANDOLSI A.A., Open Quantum Random Walks and Quantum Markov chains on Trees II: The recurrence, *Quantum Inform. Processing* **22**(2023), no. 6, Article 232.
- (243) MUKHAMEDOV F., SYAM S.M., QARALLEH I. A flow of quantum genetic Lotka-Volterra algebras on $M_2(C)$, *J. Geom. Phys.* **190**(2023), 104854.
- (242) ERKURŞUN-ÖZCAN N., MUKHAMEDOV F., An extension of the zero-two law on L_p -spaces, *Israel J. Math.* **254**(2023), no. 1, 461-477.
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- (240) MUKHAMEDOV F., SOUISSI A., BARHOUMI A. Tree homogeneous Quantum Markov chains, *Int. J. Theor. Phys.* **63**(2023), Article 19.

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- (239) ERKURŞUN-ÖZCAN N., MUKHAMEDOV F., Uniform ergodicities of Markov semigroups on abstract states spaces, *J. Math. Sci.* **266** (2022), 448-460.
- (238) JAMILOV U., MUKHAMEDOV F., Historical behavior for a class of Lotka-Volterra systems, *Math. Methods Appl. Sci.* **45**(2022), no. 17, 11380-11389.

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- (235) MUKHAMEDOV F., SOUISSI A., Entropy of quantum Markov states on Cayley trees, *J. Stat. Mech.* (2022), 093101.
- (234) JAMILOV U., MUKHAMEDOV F., A class of Lotka-Volterra operators with Historical Behavior, *Results Math.* **77**(2022), no. 4, Article 169.
- (233) MUKHAMEDOV F., EL GHETEB S., Phase Transitions for quantum Ising model with generalized competing XY -interactions on a Cayley tree, *Infin. Dimen. Anal. Quantum Probab. Related Topics* **25**(2022), no. 3, 2250010, doi.org/10.1142/S0219025722500102
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- (231) AKIN H., MUKHAMEDOV F., Phase transition for the Ising model with mixed spins on a Cayley tree, *J. Stat. Mech.* (2022), 053204
- (230) MUKHAMEDOV F., QARALLEH I., Entropy treatment of evolution algebras, *Entropy* **24**(2022), no. 5, Article 595, doi.org/10.3390/e24050595
- (229) MUKHAMEDOV F., RAHMATULLAEV M., RASULOVA M.A., Extremality of translation-invariant Gibbs measures for λ -Model on the binary Cayley Tree, *Theor. Math. Phys.* **210**(2022), no.3, 411-424.
- (228) MUKHAMEDOV F., AL-RAWASHDEH A., Generalized Dobrushin Ergodicity Coefficient and Ergodicities of Non-homogeneous Markov Chains, *Banach J. Math. Anal.* **16**(2022), Article 18, 37 p.
- (227) MUKHAMEDOV F., KHAKIMOV O., SOUISSI A., A Few Remarks on Supercyclicity of Non-Archimedean Linear Operators on $c_0(\mathbb{N})$, *P-adic Numb Ultra. Anal. Appl.* **14**(2022), no. 1, 63-75.
- (226) MUKHAMEDOV F., Extremality of disordered phase of λ -Model on Cayley Trees, *Algorithms* **15**(2022), no. 1, article 18, doi.org/10.3390/a15010018
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- (225) MUKHAMEDOV F., A few remarks on asymptotic stabilities of Markov Operators on L^1 -spaces, *Lobachevskii J. Math.* **42** (2021), 3173–3183.
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- (221) MUKHAMEDOV F., SOUISSI A., Refinement of quantum Markov states on trees, *J. Stat. Mech.* (2021) 083103
- (220) ERKURŞUN-ÖZCAN N., MUKHAMEDOV F., Spectral conditions for uniform P -ergodicities of Markov operators on abstract states spaces, *Glasgow Math. J.* **63**(2021), 682-696.
- (219) QARALLEH I., MUKHAMEDOV F., Volterra evolution algebras and their graphs, *Linear & Multilinear Algebra*, **69**(2021), no. 12, 2228-2244.

- (218) MUKHAMEDOV F., Weighted Laws of Large Numbers and Weighted One-Sided ergodic Hilbert Transforms, *Adv. Operator Theor.* **6**(2021), no. 3, Article 57.
- (217) MUKHAMEDOV F., SOUISSI A., HAMDI T., Quantum Markov Chains on the Comb Graphs: Ising Model, *Proc. Steklov Inst. Math.* **313**(2021), 178–192.
- (216) MUKHAMEDOV F., AKIN H., Characterization of bistochastic Kadison-Schwarz operators, *Proc. Steklov Inst. Math.* **313**(2021), 165–177.
- (215) MUKHAMEDOV F., QARALLEH I., S -evolution algebras and their enveloping algebras, *Mathematics* **9**(2021), 1195.
- (214) MUKHAMEDOV F., KHAKIMOV O., EMBONG A.F., Projective Surjectivity of Quadratic Stochastic Operators on L^1 and its application, *Chaos, Solitons & Fractals* **148**(2021), 111034.
- (213) MUKHAMEDOV F., EMBONG A.F. Infinite dimensional orthogonality preserving nonlinear Markov operators, *Linear & Multilinear Algebra* **69**(2021), no. 3, 526-550.
- (212) MUKHAMEDOV F., SOUISSI A., Diagonalizability of quantum Markov States on trees, *J. Stat. Phys.* **182**(2021), Article 9.

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- (211) MUKHAMEDOV F., RAFEIRO H., Weighted Strong Laws of Large Numbers on vector-valued variable exponent Lebesgue spaces, *Rend. Lincei Mat. Appl.* **31**(2020), No. 4, 791-814.
- (210) MUKHAMEDOV F., OHMURA K., WATANABE N., Renyi entropy on C^* -algebras, *J. Stochastic Anal.* **1**(2020), no. 4, Article 12.
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- (208) CHRUSCINSKI D., MUKHAMEDOV F. HAJJI M.A. On Kadison-Schwarz approximation to positive maps, *Open Systems & Inform. Dyn.* **27**(2020), no.3. 2050016.
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- (203) MUKHAMEDOV F., KHAKIMOV O., EMBONG A.F., Ergodicities of Infinite dimensional non-linear Stochastic operators, *Qualitative Theory Dyn. Sys.* **19**(2020), no. 3, 79.
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- (200) MUKHAMEDOV F., RAHMATULLAEV M., RASULOVA M.A., Weakly periodic ground states for the λ -model, *Ukr. Math. Zhur.* **72**(2020), no. 5, 771-784.
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- (196) MUKHAMEDOV F., ERKURSUN N., Perturbation bounds of Markov semigroups on abstract states spaces, *Mediterranean Jour. Math.* **17**(2020), 44.
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- (194) CHRUSCINSKI D., MUKHAMEDOV F. Dissipative generators, divisible dynamical maps and Kadison-Schwarz inequality, *Phys. Rev. A* **100**(2019), 052120.
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- (186) MUKHAMEDOV F., JAMILOV U., PIRNAPASOV A. On non-ergodic uniform Lotka-Volterra operators, *Math. Notes* **105**(2019), no. 1-2, 258–264.
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- (181) MUKHAMEDOV F., EMBONG A.F., On Non-Linear Markov operators: surjectivity vs orthogonal preservness, *Linear & Multilinear Algebra* **66** (2018), no. 11, 2183–2190.
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