Departmental List of Publications

for the Calendar Year 2023

A.Blokh, L.Oversteegen, N.Selinger, V.Timorin, S.Vejandla *Symmetric Cubic Laminations,* Conformal Geometry and Dynamics, vol. 27 (2023), 264-293

A.Blokh, P. Haissinsky, L. Oversteegen, V. Timorin *On critical renormalization of complex polynomials,* Advances in Mathematics, vol. 428 (2023), Paper No. 109135, 28 pp.

A.Blokh, L. Oversteegen, V.Timorin *Immediate renormalization of cubic complex polynomials with empty rational lamination,* Moscow Mathematical Journal, vol. 23 (2023), 441-46

Yu. Karpeshina, Seonguk Kim, R. Shterenberg *"Solutions of Gross-Pitaevskii Equation with Periodic Potential in Dimension Three"* St. Petersburg Math Journal, **35** (2023), 1, 20 pp.

Ian Knowles and Sundar Tamang, *"The inverse volatility problem for currency options"*, Electronic Journal of Differential Equations, Special Issue 02 (2023), 161-173.

M. Mohebujjaman, S. Shiraiwa, B. LaBombard, J. Wright, and K. Uppalapati, *"Scalability analysis of direct and iterative solvers used to model charging of superconducting pancake solenoids"*, Engineering Research Express, 5(1), 015045, 2023.

Hossain, M. M. Molla, M. Kamrujjaman, M. Mohebujjaman, and S.C. Saha, *"MHD Mixed Convection of Non-Newtonian Bingham Nanofluid in a Wavy Enclosure with Temperature-Dependent Thermophysical Properties: A Sensitivity Analysis by Response Surface Methodology"*, A. Energies, 16(11), 2023.

M. M. I. Y. Adan, M. Kamrujjaman, M. M. Molla, M. Mohebujjaman, and C.Buenrostro, *"The interplay of harvesting and growth rate for spatially diversified populations and testing of a decoupled scheme"*, Mathematical Biosciences and Engineering, 20(4), 6374-6399,2023.

M. Kamrujjaman, K.N. Keya, U. Bulut, M. R. Islam, and M. Mohebujjaman, *"Spatio- temporal Solutions of a Diffusive Directed Dynamics Model with Harvesting"*, Journal of Applied Mathematics and Computing, 69, 603-630, 202

Piatkin D. and Shterenberg R., *"Signal accumulation problems with constraints and its application to real-life magnetometry"*, Meas. Sci. Technol. **34** 075007, 2023.

Galkowski J., Parnovski L., Shterenberg R., *"Classical Wave methods and modern gauge transforms: Spectral Asymptotics in the one dimensional case"*, GAFA, 2023.

Lagace J., Morozov S., Parnovski L., Pfirsch B., Shterenberg R*., "The almost periodic gauge transform. An abstract scheme with applications to Dirac Operators"*, Annales of H. Lebesgue, 2023.

S. Hakkaev, M. Stanislavova, Atanas G. Stefanov, On the stability of periodic waves for the Zakharov system, J. Math. Phys. 64**,** (2023), no. 8, Paper No. 081503, 14 pp.

T. Gou, H. Hajaiej, Atanas G. Stefanov *"On the solitary waves for anisotropic nonlinear Schr\"odinger models on the plane"*, Eur. J. Math. 9, (2023), no. 3, 55.

Atanas G. Stefanov, R.M. Ross, P. Kevrekidis, "Ground states in spatially discrete non-linear Schr\"odinger lattices", Nonlinearity, 36, (2023), no. 8, p.4053--4085.

M. Stanislavova, Atanas G. Stefanov, "*On the long time dynamics of the Landau-de Gennes gradient flow"*, *J. Stat. Phys.* 190, (2023), no. 1

Stolz, H. Abdul-Rahman, *"Exponentially decaying velocity bounds of quantum walks in periodic fields"*, Comm. Math. Phys. 403 (2023), 1297-1327

Campbell, R. Weikard, "*On the spectral theory of systems of first order equations with periodic distributional coefficients*", in *From complex analysis to operator theory—a panorama Panorama, In Memory of Sergey Naboko. Edited by* M. Brown, F. Gesztesy, P. Kurasov, A. Laptev, B. Simon, G. Stolz, I. Wood, Birkhäuser/Springer, Cham, 2023, pp. 217–238.

M. Nguyen, R. Weikard, *"Asymptotic behavior of eigenvalues for first order systems with distributional coefficients*", *Ann. Henri Poincaré*, vol. 24, no. 8, 2023, pp. 2661–2685.

Yanni Zeng, *"Convergence to a diffusive contact wave for solutions to a system of hyperbolic balance Laws*", J. Hyperbolic Differ. Equ., 20 (2023), 219-257