# The 26th Northeastern Symposium on Mathematical Analysis

Date: 17–18, February, 2025

Venue: Science Complex C, Aoba Science Hall C201, Tohoku University https://maps.app.goo.gl/JmBCtzvUWK3aRpB76

### Program

#### February 17 (Mon.)

10:00 - 10:50	Inbo Sim (University of Ulsan) Boundedness for generalized Schrödinger-type double phase problems in $\mathbb{R}^N$ and its applications
11:00 - 11:50	Satoshi Masaki (Hokkaido University) On the asymptotic behavior of cubic NLS systems without weak null gauge condition
11:50 - 13:20	Lunch Break
13:20 - 14:00	Mitsuo Higaki (Kobe University) Navier wall law for viscous flows in 3D randomly rough pipes
14:10 - 14:40	Kosuke Kita (Tohoku University) Existence and decay estimate of global solutions to Nakao's problem
14:50 - 15:10	Kerun Shao (Zhejiang University) Criteria of the existence of global solutions to semilinear wave equations with first-order derivatives on exterior domains
15:10 - 15:30	Kazuya Hirose (Hokkaido University) Lower gradient estimates for viscosity solutions to first-order Hamilton–Jacobi equations depending on the unknown function
15:30 - 15:50	Fuya Hiroi (Tohoku University) Area-preserving curvature flows for planar open curves on two skew lines
16:00 - 16:20	Poster Preview
16:20 - 18:20	Poster Session (Science Complex A, Room 205)
18:30 -	Banquet

## February 18 (Tue.)

10:00 - 10:50	Hideyuki Miura (Institute of Science Tokyo) Critical norm blow-up rates for the energy supercritical nonlinear heat equation	
11:00 - 11:50	Kyouhei Wakasa (Muroran Institute of Technology) Decay estimates for the wave equations with nonlinear dissipative term in one space dimension	
11:50 - 13:20	Lunch Break	
13:20 - 13:50	Takanobu Hara (Tohoku University) Criteria for existence of Hölder continuous solutions to sub-linear elliptic equations	
13:50 - 14:20	Rong Lei (Tohoku University) Langevin deformation for Renyi entropy on Wasserstein space over Riemannian manifolds	
14:30 - 14:50	Florian Salin (Tohoku University) Large-time behavior of energy solutions to fractional fast diffusion equation: theoretical and numerical analysis	
14:50 - 15:10	Peize Yu (Hokkaido University) Optimizing nutrient-consuming motility of bacteria with mathematical model	
15:10 - 15:30	Shozo Ogino (Tohoku University) Low Mach number limit for the compressible Navier–Stokes equations in the scaling critical space	
15:40 - 16:00	Poster Award Ceremony and Closing	

#### Posters

- P1. Takuma Yoshizumi (Osaka University, M2) Finite time blow-up for semi-linear Klein-Gordon equations in FLRW spacetimes with positive initial energy
- P2. Mamoru Aihara (Hokkaido University, D1) A game interpretation for the weighted p-Laplace equation
- P3. Taiki Okazaki (Tohoku University, M2) On the uniqueness of the quasi-geostrophic equation with the fractional Laplacian
- P4. Akira Toyoshima (Tohoku University, M2) Structure of radial solutions to Hénon type equation on the hyperbolic space
- P5. Riku Nagai (Tohoku University, M2) On the uniqueness and multiplicity of positive polar angle solutions to the Emden equation on a sphere
- P6. Taiga Morita (Tohoku University, M2) Existence and multiplicity of positive solutions to the scalar field equation on a sphere
- P7. Kiichi Tashiro (Institute of Science Tokyo, D2) Existence of capillary Brakke flow
- P8. Yoshihito Nakajima (Tohoku University, D2) Solvability of nonlinear evolution equations governed by time-dependent subdifferentials involving time fractional derivatives
- P9. Koji Wada (Hokkaido University, M2) Blow-up of solutions for discrete semilinear wave equation with the scale-invariant damping
- P10. Yuri Soga (Tohoku University, M2) Concentration phenomena to a chemotaxis system with indirect signal production
- P11. Shunsuke Kitamura (Tohoku University, D3) Non-existence of solutions to the one dimensional semi-linear wave equations with spatial weights
- P12. Yuina Sato (Tohoku University, M2) Viscosity solutions for a degenerate parabolic equation with the normalized p-Laplacian
- P13. Kento Tachibana (Osaka University, M1) Nonexistence of global solutions for a semilinear diffusion equation in the de-Sitter spacetime

- P14. Keita Suzuki (Tohoku University, M2) Reflection-asymmetry of least energy solutions for the generalized Hénon equation
- P15. Kazusa Eguchi (Osaka University, M1) Global solutions and asymptotic behaviors of a type of Allen-Cahn equation in the de Sitter space time.
- P16. Zexu Li (Hokkaido University, M2) Resource-responsive motility model of expanding ring formation by trophotaxis
- P17. Haruto Tsujimoto (Hokkaido University, M1) A continuous model of the dynamics of RNA polymerase II transcription with intragenic transcriptional regulators
- P18. Yoshinori Furuto (Tohoku University, M2) Estimates of Higher-Order Derivatives for the Heat Equation on a Bounded Domain
- P19. Kensho Araya (The University of Tokyo, M2) The Solutions to the Heat Equation with a Non-linear Boundary Condition and Free Boundary
- P20. Rikuya Kakinuma (Tohoku University, M2)  $L^2$  normalized solutions to scalar field equations with absorption under Berestycki-Lions conditions
- P21. Yuki Haruyama (Tohoku University, M2) New models for nonlinear wave equations in one space dimension
- P22. Kotaro Motegi (Institute of Science Tokyo, M1)A regularity theorem for integral varifolds close to a triple junction
- P23. Noboru Isobe (The University of Tokyo, D3) A convergence result of a continuous model of deep learning via Łojasiewicz–Simon inequality
- P24. Tokuhiro Eto (Graduate School of Mathematical Sciences, The University of Tokyo, Associate fellow)
  On existence and uniqueness for transport equations with non-smooth velocity fields under inhomogeneous Dirichlet data

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