

# Analytical and Numerical Methods in Differential Equations (Yanenko 105)

23 -- 27 March 2026

## Conference Program

(Accurate as of 23 March 2026)

Conference Website: <http://math.sut.ac.th/conference>

Zoom Link: <https://us06web.zoom.us/j/81644791530?pwd=IGCYKFbh8T0YbbbHYAUEjqHgm8SfYA.1>



( Alternative --- Zoom Meeting ID: 816 4479 1530 --- Passcode: 092555 )

### All times are local Thai times. (GMT +7)

Novosibirsk, Krasnoyarsk --- same time as in Thailand

India --- subtract 1.5 hours

Pakistan --- subtract 2 hours

Moscow, Turkey --- subtract 4 hours

Moldova, South Africa --- subtract 5 hours

Central Europe --- subtract 6 hours

GMT --- subtract 7 hours

Eastern Daylight Savings Time (EDT) --- subtract 11 hours

Central Standard Time (CST) --- subtract 13 hours

### Monday, 23 March 2026

Time (Thailand)	Presenter/Paper
	<i>Chair: Chaiyasena A. P.</i>
12.00 -- 12.05	Opening Address by <b>Assoc. Prof. Dr. Sittichai Seangatith</b> Acting Rector, Suranaree University of Technology
12.05 -- 12.10	Opening Remarks by <b>Academician Prof. Dr. Alexander I. Aptekarev</b> Director, Moscow Center of Fundamental and Applied Mathematics Keldysh Institute of Applied Mathematics
12.10 -- 12.15	Opening Remarks by <b>Prof. Dr. Sibusiso Moyo</b> Deputy Vice-Chancellor for Research, Innovation and Postgraduate Studies Stellenbosch University, South Africa
12.15 -- 12.20	Welcoming Remarks by <b>Prof. Dr. Santi Maensiri</b> Dean, Institute of Science, Suranaree University of Technology
12.20 -- 12.50	Opening Remarks by <b>Academician Prof. Dr. Vasilij M. Fomin</b> Scientific Advisor, Khristianovich Institute of Theoretical and Applied Mechanics Russian Academy of Sciences (Siberian Branch) followed by special lecture: The role of Academician Nikolai N. Yanenko in solving problems of high-speed interaction of bodies
10-minute Break	
	<i>Chair: Dobrokhotov, S.Yu.</i>
13.00 -- 13.20	<b>Dobrokhotov, S.Yu.</b> [A01] Asymptotic solutions of multidimensional linear (pseudo)differential equations with time-harmonic and spatially-localized sources
13.20 -- 13.40	<b>Kuznetsov, I.</b> [A02] The direct and inverse problems for the Kelvin-Voigt equations. Application to incompressible inhomogeneous active fluids
13.40 -- 14.00	<b>Sinitsyn, A.A.</b> [A03] Numerical study of flutter in an orthotropic rectangular plate with mixed boundary conditions
20-minute Coffee Break	

Time (Thailand)	Presenter/Paper	
<i>Chair: Chesnokov, A.A.</i>		
14.20 -- 14.40	<b>Chesnokov, A.A.</b> Internal waves in a thermally stratified reservoir: modeling and field observations in South Baikal	[A04]
14.40 -- 15.00	<b>Stetsyak, E.S.</b> Dynamics of the Conformation Tensor Invariants in Models with Quadratic Nonlinearity	[A05]
15.00 -- 15.20	<b>Cherevko, A.A.</b> Mathematical modeling of some cerebral vascular pathologies	[A06]
15.20 -- 15.40	<b>Aksenov, A.V.</b> Fundamental solutions of a transversely isotropic elastic medium equations	[A07]
15.40 -- 16.00	<b>Grigoriev, Yu.N.</b> Thermochemical nonequilibrium as a factor of stabilization of supersonic boundary layers	[A08]
16.00 - 16.20	<b>Vedenyapin, V.V.</b> Vlasov - type equations, Miln-McCree method and derivation of Hubble law for rotation invariant Hamiltonians and Accelerated expansion of the universe from minimal action principle	[A09]
40-minute Lunch/Dinner Break		
<i>Chair: Nasyrov, F.S.</i>		
17.00 -- 17.20	<b>Nasyrov, F.S.</b> The truncation method for finding solutions to nonlinear equations	[A10]
17.20 -- 17.40	<b>Zotova, E.I.</b> On stochastic and deterministic generalized Burgers equations	[A11]
17.40 -- 18.00	<b>Abdrakhmanov, S.I.</b> On the stochastic nonlinear Schrödinger equation	[A12]
18.00 -- 18.20	<b>Suchkova, D.A.</b> On the solutions of the Cauchy problem for generalized stochastic and deterministic Korteweg - de Vries equations	[A13]
18.20 -- 18.40	<b>Ramani, J.B.</b> Interpretation of Actuarial Science Models Using Mathematical Techniques	[A14]
18.40 -- 19.00	<b>Tarei, S.</b> An Effective Numerical Approach to Option Pricing with an Underlying Asset	[A15]
20-minute Coffee Break		
<i>Chair: Kumar, A.</i>		
19.20 -- 19.40	<b>Shukla, V.K.</b> Matrix and inverse matrix projective synchronization of chaotic dynamical systems	[A16]
19.40 -- 20.00	<b>Ali, M.</b> Global Solutions to the Discrete Nonlinear Breakage Equations without Mass Transfer	[A17]
20.00 -- 20.20	<b>Muduli, T.K.</b> Similarity reductions and invariant solutions of (3 + 1)-dimensional generalized Konopelchenko-Dubrovsky-Kaup-Kupershmidt model via Lie symmetry analysis	[A18]
40-minute Lunch/Dinner Break		
<i>Chair: Meleshko, S.V.</i>		
21.00 -- 21.20	<b>Dimakis, N.</b> A quantum time operator for parametrization invariant Lagrangians	[A19]
21.20 -- 21.40	<b>Druzhkov, K.</b> Invariant reduction of Poisson brackets	[A20]
21.40 -- 22.00	<b>Bila, N.</b> On the generalized Tzitzeica curve equation	[A21]

**Tuesday, 24 March 2026**

Time (Thailand)	Presenter/Paper	
<i>Chair: Kaptsov, O.V.</i>		
11.00-- 11.20	<b>Kaptsov, O.V.</b> Solutions to the Riemann-Euler equations and their applications	[B01]
11.20 --12.00	<b>Qadir, A</b> The Importance of Breaking Symmetries	[B02]
12.00 -- 12.20	<b>Seshadri, R.</b> Exact solutions for nonlinear partial differential equations using invariant subspace method to incompressible inhomogeneous active fluids	[B03]
12.20 -- 12.40	<b>Patil, A.</b> Integrability of (1+2)-dimensional Kudryashov-Sinelshchikov (KS) equation using Painlevé Analysis and their exact solutions	[B04]
12.40-- 13.00	<b>Panda, D.P.</b> Lie Symmetry and Variational Analysis of a Blood Flow Model with Body Force	[B05]
1-hour Breakfast/Lunch Break		
<i>Chair: Borovskikh, A.V.</i>		
14.00 -- 14.20	<b>Borovskikh, A.V. and Platanova, K.S.</b> Group approach to the problem of the connecting kinetic equations to the continuous medium equations in the one-dimensional case: from the idea of closing the momentum system to the group foilation	[B06]
14.20 -- 14.40	<b>Peradzyński, Z. and Baghaturia, G.</b> Slicing The PDE's Systems	[B07]
14.40-- 15.00	<b>Habibullin, I.T.</b> On the construction of solutions of the Davey-Stewartson I equation via dressing chain	[B08]
15.00 -- 15.20	<b>Stepanyants, Yu.A.</b> Soliton dynamics in media with positive dispersion	[B09]
15.20 -- 15.40	<b>Pan-Collantes, A.J.</b> Integration of PDEs via Differential Constraints and $C^\infty$ -structures	[B10]
15.40-- 16.00	<b>Katlariwala, S.B.</b> Symmetries of Multi-Fluid Scalar Field Cosmologies	[B11]
20-minute Coffee Break		
<i>Chair: Seesanea, A.</i>		
16.20 -- 16.40	<b>Seesanea, A.</b> A Sublinear Fractional Sobolev Inequality for Superharmonic Functions	[B12]
16.40 -- 17.00	<b>Derevtsov, E. Yu.</b> On models of a slice-by-slice solution to a refractive tomography problem in the half-space	[B13]
17.00 -- 17.20	<b>Shwe, T.T.</b> Dirichlet Problem for Lane-Emden Type Equations Involving Several Sublinear Terms	[B14]
17.20 -- 17.40	<b>May, A.C.</b> Finite Energy Solutions to Sublinear Elliptic Systems Involving Measure	[B15]
17.40 -- 18.00	<b>Pandey, P.K.</b> Sturm's theorems in terms of generalized derivatives	[B16]
1-hour Lunch/Dinner Break		
<i>Chair: Kudryashov, N.A.</i>		
19.00 -- 19.20	<b>Kudryashov, N.A.</b> The Kuramoto-Sivashinsky equation with nonlinear convection: reduction, Painlevé test, first integrals and general solution	[B17]
19.20 -- 19.40	<b>Nifontov, D.R.</b> Conservation laws for nonlinear Schrödinger equations of general form	[B18]
19.40 -- 20.00	<b>Dryuma, V.S.</b> The Riemann spaces related to the Navier-Stokes equations	[B19]

**Wednesday, 25 March 2026**

Time (Thailand)	Presenter/Paper	
<i>Chair: Kaptsov, E.I.</i>		
11.00-- 11.20	<b>Kaptsov, E.I.</b> Invariant Conservative Finite-Difference Schemes for Some Two-Dimensional Hydrodynamic-Type	[C01]
11.20 -- 11.40	<b>Talyshev, A.A.</b> On the use of total differentiation operators for constructing numerical algorithms for involutive systems	[C02]
11.40 -- 12.00	<b>Ostapenko, V.V.</b> Improving the Accuracy of Shock Capturing Schemes Using the Richardson Extrapolation	[C03]
12.00 -- 12.20	<b>Basak, P.</b> Analytical and Numerical Approaches to Nonlinear Differential Equation Models	[C04]
12.20 -- 12.40	<b>Bhattacharya, U.</b> A physics-informed neural network based method for the nonlinear Poisson-Boltzmann equation in Electrolyte–Polyelectrolyte Systems	[C05]
12.40-- 13.00	<b>Karthiga, M</b> Conservation Laws for Non linear PDE modelling Microtubules	[C06]
1-hour Breakfast/Lunch Break		
<i>Chair: Gordin, V.A.</i>		
14.00 -- 14.20	<b>Gordin, V.A.</b> The compact finite-difference scheme and modified Richardson extrapolation for NLSE	[C07]
14.20 -- 14.40	<b>Pukhnachev, V.V.</b> Axisymmetric boundary layers in second grade fluid	[C08]
14.40-- 15.00	<b>Dinesh, K.S.</b> Adaptive spline technique to solve singularly perturbed delay differential equation with mixed large shifts	[C09]
15.00 -- 15.20	<b>Rajagopal, S.</b> Spline Based Computational Technique for Singularly Perturbed Fredholm Integro-Differential Problems	[C10]
15.20 -- 15.40	<b>Gupta, D.</b> A mixed FEM for PIDE using bioorthogonal basis	[C11]
15.40-- 16.00	<b>Abhilasha</b> Wavelet-based numerical approximation in Hölder spaces and application to Riccati differential equations using Vieta–Lucas wavelets	[C12]
20-minute Coffee Break		
<i>Chair: Agapov, S.V.</i>		
16.20 -- 16.40	<b>Agapov, S.V.</b> High-degree polynomial integrals of geodesic flows and the generalized hodograph method	[C13]
16.40 -- 17.00	<b>Rogalev, A.N.</b> Metric and topological properties of solution sets of systems of ordinary differential equations with effects specified as functional parameters	[C14]
17.00 -- 17.20	<b>Mayuri, S.</b> An Analytical Study of Thermally Affected Flow in Curved Pipes	[C15]
17.20 -- 17.40	<b>Mandal, R.</b> Existence and uniqueness of $C^1$ Solution to the Goursat Problem for the dusty gas flow	[C16]
17.40 -- 18.00	<b>Koprulu, M.O.</b> Propagation of Nonlinear Waves in the Combined Kairat-II–X Equation	[C17]
1-hour Lunch/Dinner Break		
<i>Chair: Kovtunenکو, V.A.</i>		
19.00 -- 19.20	<b>Kovtunenکو, V.A.</b> Semi-smooth Newton method for contact and dynamic problems	[C18]
19.20 -- 19.40	<b>Grover, D.</b> Winkler foundation based viscothermoelastic micro-scale circular plate resonators	[C19]
19.40 -- 20.00	<b>Saini, A.</b> Love wave propagation in a tri-layered porous system under initial stress with parabolic interfacial irregularity	[C20]

**Thursday, 26 March 2026**

Time (Thailand)	Presenter/Paper	
<i>Chair: Vaish, R.</i>		
11.00-- 11.20	<b>Vaish, R.</b> Generalized viscosity implicit scheme with Meir-Keeler contraction for inclusion and fixed point problems in Banach spaces	[D01]
11.20 -- 11.40	<b>Meena, A.K.</b> Hybrid finite difference WENO schemes for Ten-Moment Gaussian closure equations with source term	[D02]
11.40 -- 12.00	<b>Raji, M.</b> Fuzzy Finite Element Method for Uncertainty Modelling	[D03]
12.00 -- 12.20	<b>Verma, M.</b> A Robust Kinetic Meshfree Method for Anisotropic Point Clouds	[D04]
12.20 -- 12.40	<b>Kalimuthu, T.</b> A Fractional Step Numerical Framework for Fuzzy Preference Dynamics in Music Recommendation	[D05]
12.40-- 13.00	<b>Tamizhazhagan, S.</b> Spatially Biased Particle Dynamics in Coupled Transport Processes	[D06]
1-hour Breakfast/Lunch Break		
<i>Chair: Rozanova, O.S.</i>		
14.00 -- 14.20	<b>Rozanova, O.S.</b> On the closure of moment chains in the kinetic model of cold plasma	[D07]
14.20 -- 14.40	<b>Stepanova, I.V.</b> Closure Conditions for the Governing Equations of Steady-State Evaporative Convection in Binary Mixtures	[D08]
14.40-- 15.00	<b>Melnikov, I.E.</b> Bifurcations in solitary wave dynamics for models close to modified Kortwseg - de Vries equation	[D09]
15.00 -- 15.20	<b>Palymskiy, I.B.</b> Stability of a compressible gas layer in a gravity field	[D10]
15.20 -- 15.40	<b>Chistykhova, E.</b> A Concept of Index and Some Structural Properties of Partial Differential-Algebraic Equations	[D11]
15.40-- 16.00	<b>Zhang, B.</b> Exploration of Stability for Stationary Solutions to the Vlasov-Poisson Equations	[D12]
20-minute Coffee Break		
<i>Chair: Campoamor-Stursberg, R.</i>		
16.20 -- 16.40	<b>Campoamor-Stursberg, R.</b> Nonlinear Lie-Hamilton systems	[D13]
16.40 -- 17.00	<b>Gavrilyuk, S.</b> How to determine the speed and amplitude of the leading edge of a dispersive shock wave	[D14]
17.00 -- 17.20	<b>Evtikhov, D.O.</b> Using of conservation laws to construct an elastic-plastic boundary of twisted multilayer rods of a rolled profile reinforced with elastic fibers	[D15]
17.20 -- 17.40	<b>Savostyanova, I.L.</b> Apply conservation laws to calculate the voltage of an aircraft skin elementrmation	[D16]
17.40 -- 18.00	<b>Senashov, S.I.</b> The use of conservation laws for the analytical solution of the elastic problem of antiplane deformation	[D17]
1-hour Lunch/Dinner Break		
<i>Chair: Shyamsunder</i>		
19.00 -- 19.20	<b>Shyamsunder</b> Memory-Driven Epidemic Dynamics with Environmental Transmission and Vaccination Incentives	[D18]
19.20 -- 19.40	<b>Kumar, A.</b> Autonomous and Nonautonomous Dynamics of an SIRS Model: An Application to Seasonal Influenza in the Congo	[D19]
19.40 -- 20.00	<b>Myint, A.</b> Dynamics and pattern formation in a diffusive predator-prey model with fear effect	[D20]
20.00 -- 20.20	<b>Vardireddy, M.R.</b> Analysis of Epidemic Models through Singularities	[D21]
20.20 -- 20.40	<b>Nahar, S.</b> Mathematical Analysis of Brain Tumors	[D22]
20.40 -- 21.00	<b>Pu, H.</b> A pest management SI epidemic model with instantaneous and non-instantaneous impulsive effects	[D23]

**Friday 27 March 2026**

Time (Thailand)	Presenter/Paper	
<i>Chair: Prakash, P.</i>		
11.00-- 11.20	<b>Prakash, P.</b> Analytical Methods and Exact Solutions of Fractional-order Partial Differential Equations	[E01]
11.20 -- 11.40	<b>Kumar, S.</b> A Numerical Scheme Based on Fractional Lagrange Polynomials for Nonlinear Fractional Volterra–Fredholm Integro-Differential Equations	[E02]
11.40 -- 12.00	<b>Kassimi, S.</b> Improving image denoising via a nonlocal anisotropic diffusion model based on Caputo fractional derivatives and Gaussian convolution	[E03]
12.00 -- 12.20	<b>Kucche, K.D.</b> Tempered- $\psi$ -Hilfer fractional derivative and fractional differential equations involving it	[E04]
12.20 -- 12.40	<b>Louakar</b> Iterative learning control for Hilfer-type fractional stochastic differential systems: a simulation study for robotic applications	[E05]
12.40-- 13.00	<b>Senthilprabu, T.</b> A study on existence, uniqueness and Uilam-Hyers stability of impulsive neutral Hilfer fractional control systems with nonlocal conditions	[E06]
1-hour Breakfast/Lunch Break		
<i>Chair: Kumar, A.</i>		
14.00 -- 14.20	<b>Pinar Izgi, Z.</b> The Extensive Study of Rossby Type Waves in Magnetohydrodynamics	[E07]
14.20 -- 14.40	<b>Thaku, R.S.</b> Common Fixed Point Results for Multi-Fuzzy Mappings in Generalized Metric Spaces	[E08]
14.40-- 15.00	<b>Ramasamy, S.</b> Existence, uniqueness & stability analysis of impulsive implicit neutral delay systems involving tempered Caputo fractional derivatives	[E09]
15.00 -- 15.20	<b>Prasad, K.</b> Operational formulas of Appell-type telephone-Hermite polynomials	[E10]
15.20 -- 15.40	<b>Kumar, V.S.</b> Secure control design of complex partial differential systems subject to actuator fault	[E11]
15.40-- 16.00	<b>Thumbalam, G.P.</b> Analysis of Parkinson Disease Using Fuzzy C-Means Clustering Techniques.	[E12]
20-minute Coffee Break		
<i>Chair: Mahesha, R.</i>		
16.20 -- 16.40	<b>Mahesha, R.</b> Heat and mass transfer analysis over a multilayer flow	[E13]
16.40 -- 17.00	<b>Garai, R.</b> Differential Equation Based Modeling of Vibrational Behavior in Material-Graded Perforated Nanobeams	[E14]
17.00 -- 17.20	<b>Gartia, A.K.</b> Modeling and Solution of Differential Equation for Cracked Nonhomogeneous Nanobeams	[E15]
17.20 -- 17.40	<b>Maji, R.</b> The influence of surface elasticity on shear wave propagation in a cylindrical layer structure with an imperfect interface	[E16]
17.40 -- 18.00	<b>Priyanka</b> Intrinsic phenomena of delta shock waves in a more realistic Chaplygin Aw-Rasclle model	[E17]
18.00 -- 18.20	<b>Moyo, S.</b> TBA	[E18]
18.20 -- 18.30	<i>Closing Remarks</i>	