

Analytical and Numerical Methods in Differential Equations

23 August 2021 — 27 August 2021

Conference Program

Time Conversion Table

Thai/NVB +3	Moscow+7	Europe+8	CDT+15	Queensland (Australia), Vladivostok
Thai/NVB +1	Moscow+5	Europe+6	CDT+13	China, Irkutsk
Thai/NVB	Moscow+4	Europe+5	CDT+12	Thailand, Novosibirsk, Krasnoyarsk
Thai/NVB-1	Moscow+3	Europe+4	CDT+11	Nur-Sultan
Thai/NVB-1.5	Moscow+2.5	Europe+3.5	CDT+10.5	India
Thai/NVB-2	Moscow+2	Europe+3	CDT+10	Pakistan, Yekaterinburg, Ufa
Thai/NVB-2.5	Moscow+1.5	Europe+2.5	CDT+9.5	Iran
Thai/NVB-3	Moscow+1	Europe+2	CDT+9	United Arab Emirates
Thai/NVB-4	Moscow	Europe+1	CDT+8	Moscow, Grozny, St.Petersburg (MSK) Greece, Moldova, Saudi Arabia, Turkey, Ukraine
Thai/NVB-5	Moscow-1	Europe	CDT+7	South Africa Austria, Czechia, France, Germany, Italy, Poland, Spain
Thai/NVB-10	Moscow-6	Europe-5	CDT+2	Halifax (ADT)
Thai/NVB-11	Moscow-7	Europe-6	CDT+1	New York, North Carolina, Ontario (EDT), Chile
Thai/NVB-12	Moscow-8	Europe-7	CDT	Bogota, Alabama, Minnesota (CDT)
Thai/NVB-13	Moscow-9	Europe-8	CDT-1	Saskatchewan (CST)
Thai/NVB-14	Moscow-10	Europe-9	CDT-2	California, Oregon (PDT)

Monday, 23 August 2021

Thai/NVB	Moscow	Europe	US CDT	
				<i>Chair: Chaiyasena A. P.</i>
13.00 – 13.05	9.00 – 9.05	8.00 – 8.05	1.00 – 1.05	Opening Address by Assoc. Prof. Dr. Anan Tongraar Acting Rector Suranaree University of Technology
13.05 – 13.10	9.00 – 9.05	8.05 – 8.10	1.05 – 1.10	Opening Remarks by Prof. Dr. Eugene A. Bondar Deputy Director Khristianovich Institute of Theoretical and Applied Mechanics
13.10 – 13.15	13.00 – 9.05	8.10 – 8.15	1.10 – 1.15	Opening Remarks by Prof. Dr. Sibusiso Moyo Deputy Vice Chancellor for Research, Innovation and Engagement Durban University of Technology
13.15 – 13.45	9.15 – 9.45	8.15 – 8.45	1.15 – 1.45	Fomin V. M. [A01] <i>N.N. Yanenko — Siberian, Soldier and Scientist</i>
14.15 – 14.40	10.15 – 10.40	9.15 – 9.40	2.15 – 2.40	Peradzynski Z., Baghaturia G. [A03] <i>Double waves and Yanenko equation</i>
Coffee Break				
				<i>Chair: Pukhnachev V. P.</i>
14.50 – 15.20	10.50 – 11.20	9.50 – 10.20	2.50 – 3.20	Oberlack M., Hoyas S., Kraheberger S., Alcántara-Álvila F., Laux J., Klingenberg D., Hollmann P., Vallikivi M., Hultmark M., Bellani G., Talamelli A., Zimmerman S., Klewicki J. [A04] <i>Classical and statistical symmetries of turbulence – the basis of turbulent scaling laws of wall-bounded shear flows for arbitrary moments</i>
15.20 – 15.45	11.20 – 11.45	10.20 – 10.45	3.20 – 3.45	Wacławczyk M, Grebenev V. N., Oberlack M. [A05] <i>Conformal invariance of the 1-point statistics of the zero-isolines of 2d scalar fields in inverse turbulent cascades</i>
15.45 – 16.10	11.45 – 12.10	10.45 – 11.10	3.45 – 4.10	Andreev V. K., Lemeshkova E. N. [A06] <i>On the asymptotic behavior of inverse problems for parabolic equation</i>
16.10 – 16.35	12.10 – 12.35	11.10 – 11.35	4.10 – 4.35	Grebenev V. N., Demenkov A. G., Chernykh G. G. [A07] <i>Local equilibrium approximation in free turbulent flows: verification through the method of differential constraints</i>
Lunch / Dinner Break				
				<i>Chair: Kaptsov O. V.</i>
18.00 – 18.25	14.00 – 14.25	13.00 – 13.25	6.00 – 6.25	Manganaro N. [A09] <i>Method of differential constraints for nonlinear wave problems</i>
18.25 – 18.50	14.25 – 14.50	13.00 – 13.50	6.25 – 6.50	Habibullin I. T. [A10] <i>Generalized invariant manifolds and their applications</i>
18.50 – 19.15	14.50 – 15.15	13.50 – 14.15	6.50 – 7.15	Dryuma V. S. [A11] <i>The Riemann spaces related to the Navier-Stokes equations</i>
19.15 – 19.40	15.15 – 15.40	14.15 – 14.40	7.15 – 7.40	Pavlov M. V. [A12] <i>Egorov hydrodynamic type systems</i>
19.40 – 20.10	15.40 – 16.10	14.40 – 15.10	7.40 – 8.10	Sergyeyev A. [A13] <i>Integrable systems in four independent variables from contact geometry (slides)</i>
Coffee Break				
				<i>Chair: Dorodnitsyn, V. A.</i>
20.35 – 21.00	16.35 – 17.00	15.35 – 16.00	8.35 – 9.00	Dyachenko S. A., Zakharov V. E., Dyachenko A. I. [A14] <i>On dynamics of a free boundary in 2D hydrodynamics</i>
21.00 – 21.25	17.00 – 17.25	16.00 – 16.25	9.00 – 9.25	Anco S. C. [A15] <i>General symmetry multi-reduction method for partial differential equations with conservation laws</i>
21.25 – 21.50	17.25 – 17.50	16.25 – 16.50	9.25 – 9.50	Olver P. J. [A16] <i>Higher order symmetries of underdetermined systems of partial differential equations and Noether's second theorem</i>

Tuesday, 24 August 2021

Thai/NVB	Moscow	Europe	US CDT	
				<i>Chair: Pelinovsky E.</i>
13.00 – 13.25	9.00 – 9.25	8.00 – 8.25	1.00 – 1.25	Grigoriev Yu. N., Meleshko S. V., Siritwat P. [A18] Qualitative properties and invariant solutions of the nonstationary one-dimensional equations of a vibrationally excited gas
13.25 – 13.50	9.25 – 9.50	8.25 – 8.50	1.25 – 1.50	Stepanyants Y. A. [A19] Scalar description of three-dimensional flows of incompressible fluid
13.50 – 14.15	9.50 – 10.15	8.50 – 9.15	1.50 – 2.15	Makarenko N. I., Maltseva J. L., Cherevko A. A. [A20] Internal waves in two-layer stratified flows
14.15 – 14.40	10.15 – 10.40	9.15 – 9.40	2.15 – 2.40	Kukushkin D. E., Makarenko N. I., Shapeev V. P. [A21] Modelling stationary flows in bounded domain
14.40 – 15.05	10.40 – 11.05	9.40 – 10.05	2.40 – 3.05	Karabut E. A., Zhuravleva E. N. [A22] Using analytical continuation for solving nonlinear free boundary problems
Coffee Break				
				<i>Chair: Makarenko N. I.</i>
15.20 – 15.45	11.20 – 11.45	10.20 – 10.45	3.20 – 3.45	Gavrilyuk S., Shyue K.-M. [A23] Singular solutions of the BBM equation: analytical and numerical study
15.45 – 16.10	11.45 – 12.10	10.45 – 11.10	3.45 – 4.10	Chesnokov A. A., Liapidevskii V. Yu. [A24] Internal solitary waves in a multi-layer stratified fluid: new models and their verification
16.10 – 16.35	12.10 – 12.35	11.10 – 11.35	4.10 – 4.35	Baenova G. M., Sukhinin S. V., Zhumadillayeva A. K. [A25] Features of the propagation of long Waves in phonon crystals
16.35 – 17.00	12.35 – 13.00	11.35 – 12.00	4.35 – 5.00	Tkachev D. L. [A26] Lyapunov instability of the polymeric fluid flow in channel (channel walls are perforated)
Lunch / Dinner Break				
				<i>Chair: Muriel C.</i>
18.00 – 18.25	14.00 – 14.25	13.00 – 13.25	6.00 – 6.25	Paliathanasis A. [A30] Lie symmetries and Bohmian inhomogeneous cosmology
18.25 – 18.50	14.25 – 14.50	13.25 – 13.50	6.25 – 6.50	Holba P. [A28] Complete classification of local conservation laws for generalized Kuramoto-Sivashinsky equation
18.50 – 19.15	14.50 – 15.15	13.50 – 14.15	6.50 – 7.15	Kovtunenkov V. A. [A29] Shape gradient method of equilibrium-constrained optimization for semi-linear Stokes-Brinkman-Forchheimer's equation
19.15 – 19.40	15.15 – 15.40	14.15 – 14.40	7.15 – 7.40	Halder A. K., Duba, C. T., Leach, P. G. L. [A27] Symmetries and solutions of the modified nonlinear Schrödinger equation
19.40 – 20.05	15.40 – 16.05	14.40 – 15.05	7.40 – 8.05	Aibinu M. O., Thakur S. C., Moyo S. [A31] On construction of exact solutions to delay reaction-diffusion systems
Coffee Break				
				<i>Chair: Halder, A. K.</i>
20.45 – 21.10	16.45 – 17.10	15.45 – 16.10	8.45 – 9.10	Bila N. [A32] A study of the Tzitzeica curves equation
21.35 – 22.00	17.35 – 18.00	16.35 – 17.00	9.35 – 10.00	Torres R. [A35] Uniform approximation of impulsive differential systems by using a piecewise constant argument

Wednesday, 25 August 2021

Thai/NVB	Moscow	Europe	US CDT	
				<i>Chair: Chesnokov A. A.</i>
13.00 – 13.25	9.00 – 9.25	8.00 – 8.25	1.00 – 1.25	Vaneeva O. O. [A36] Normalization property of classes of differential equations and its application in group analysis
13.25 – 13.50	9.25 – 9.50	8.25 – 8.50	1.25 – 1.50	Talyshev A. A. [A37] Differential-invariant solutions of the Navier-Stokes equations with respect to one four-dimensional group
13.50 – 14.15	9.50 – 10.15	8.50 – 9.15	1.50 – 2.15	Dimakis N. [A38] Geodesic equations and nonlocal conservation laws: The exceptional pp-wave case.
14.15 – 14.40	10.15 – 10.40	9.15 – 9.40	2.15 – 2.40	Siraeva D. T. [A39] Submodels and exact solutions of the gas dynamics equations with state equation of a special form
14.40 – 15.05	10.40 – 11.05	9.40 – 10.05	2.40 – 3.05	Seesanea A. [A40] Continuous solutions to sublinear elliptic problems
Coffee Break				
				<i>Chair: Paliathanasis, A.</i>
15.20 – 15.45	11.20 – 11.45	10.20 – 10.45	3.20 – 3.45	Campoamor-Stursberg R. [A41] Branching rules and subduced representations applied to the symmetry breaking of ODEs
15.45 – 16.10	11.45 – 12.10	10.45 – 11.10	3.45 – 4.10	Halder A. K., Paliathanasis, A., Almusawa, H., Leach P. G. L. [A42] Solutions of the Boiti-Leon-Manna-Pempinelli equation using symmetries
16.10 – 16.35	12.10 – 12.35	11.10 – 11.35	4.10 – 4.35	Pinar Z., Orhan Ö. [A43] The symmetries of the fully nonlinear Monge-Ampere equation
16.35 – 17.00	12.35 – 13.00	11.35 – 12.00	4.35 – 5.00	Naseer S., Raza A., Zaman F. D. and Kara A. H. [A44] Optimal system and conservation laws for the generalized Fisher equation in cylindrical coordinates
Lunch / Dinner Break				
				<i>Chair: Tsarev S. P.</i>
18.00 – 18.25	14.00 – 14.25	13.00 – 13.25	6.00 – 6.25	Conte R., Grundland A. M. [A45] Reduction of a sine-Gordon system to a sixth order Painlevé equation
18.25 – 18.50	14.25 – 14.50	13.25 – 13.50	6.25 – 6.50	Kudryashov N. A. [A48] The generalized Hermite polynomials for the Burgers hierarchy and point vortices
Coffee Break				
				<i>Chair: Conte R.</i>
19.35 – 20.00	15.35 – 16.00	14.35 – 15.00	7.35 – 8.00	Halder A. K., Almusawa H., Paliathanasis A., Leach P. G. L. [A46] Comparative analysis of continuous Kadomtsev-Pervashvili-type equations using symmetries
20.00 – 20.25	16.00 – 16.25	15.00 – 15.25	8.00 – 8.25	Muriel C., Nucci M. C., Romero, J. L. [A49] On chains of differential equations
20.25 – 20.50	16.25 – 16.50	15.25 – 15.50	8.25 – 8.50	Orhan Ö., Pinar Z. [A50] Exact solutions and linearization of Ermakov-Pinney equation via the nonlocal transformation-symmetry approach
20.50 – 21.15	16.50 – 17.15	15.50 – 16.15	8.50 – 9.15	Mitsopoulos A., Tsampanlis, M. [A51] Higher order first integrals of autonomous dynamical systems
Coffee Break				
				<i>Chair: Schulz, E.</i>
21.30 – 21.55	17.30 – 17.55	16.30 – 16.55	9.30 – 9.55	Cheviakov A., Dutykh D., Assylbekuly A. [A52] Symmetry properties of a family of BBM-type equations
21.55 – 22.20	17.55 – 18.20	16.55 – 17.20	9.55 – 10.20	Tarayrah M. R., Cheviakov A. [A53] All exact symmetries of higher-order ODEs are stable

Thursday, 26 August 2021

Thai/NVB	Moscow	Europe	US CDT	
<i>Chair: Kudryashov N. A.</i>				
13.00 – 13.25	9.00 – 9.25	8.00 – 8.25	1.00 – 1.25	Ulyanov O. N., Rubina L. I. [A54] <i>On some methods of reducing nonlinear partial differential equations to systems of ordinary differential equations</i>
13.25 – 13.50	9.25 – 9.50	8.25 – 8.50	1.25 – 1.50	Kaptsov O. V., Mirzaokhmedov M. M. [A55] <i>General solutions of some linear equations with variable coefficients</i>
13.50 – 14.15	9.50 – 10.15	8.50 – 9.15	1.50 – 2.15	Kazakov A. L., Lee M.-G., Lempert A. A. [A56] <i>Exact solutions having diffusion wave type in nonlinear models of thermal conductivity, filtration, and diffusion</i>
14.15 – 14.40	10.15 – 10.40	9.15 – 9.40	2.15 – 2.40	Isaev V. I., Cherepanov A. N., Shapeev V. P. [A57] <i>Numerical study of heat modes of laser welding of dissimilar metals with an intermediate insert</i>
14.40 – 15.05	10.40 – 11.05	9.40 – 10.05	2.40 – 3.05	Palymskiy I. B., Palymskiy V. I. [A58] <i>About convection of compressible gas</i>
Coffee Break				
<i>Chair: Andreev V. K.</i>				
15.20 – 15.45	11.20 – 11.45	10.20 – 10.45	3.20 – 3.45	Sharifullina T. S., Cherevko A. A., Ostapenko V. V. [A59] <i>Numerical modeling of cerebral arterio-venous malformation embolization based on clinical data</i>
15.45 – 16.10	11.45 – 12.10	10.45 – 11.10	3.45 – 4.10	Tsarev S. P. [A60] <i>Discrete orthogonal polynomials: detection of anomalies of time series and boundary effects of polynomial filters</i>
16.10 – 16.35	12.10 – 12.35	11.10 – 11.35	4.10 – 4.35	Rogalev A. N. [A61] <i>Symbolic methods for estimating the sets of solutions of ordinary differential equations with perturbations on a finite time interval</i>
16.35 – 17.00	12.35 – 13.00	11.35 – 12.00	4.35 – 5.00	Kulikov E. K., Makarov A. A. [A62] <i>On approximation functionals to minimal splines</i>
Lunch / Dinner Break				
<i>Chair: Gavriluk, S.</i>				
18.00 – 18.25	14.00 – 14.25	13.00 – 13.25	6.00 – 6.25	Dobrokhotoev S. Yu. [A63] <i>Constructive uniform asymptotics of linear water waves generated by localized sources</i>
18.25 – 18.50	14.25 – 14.50	13.25 – 13.50	6.25 – 6.50	Bogdanov A. N. [A64] <i>Dynamics of shock waves in media with longitudinal stratification. The precise evolution (In Russian only)</i>
18.50 – 19.15	14.50 – 15.15	13.50 – 14.15	6.50 – 7.15	Pelinovsky E., Talipova T. [A65] <i>Travelling waves in 1D strongly inhomogeneous media</i>
19.15 – 19.40	15.15 – 15.40	14.15 – 14.40	7.15 – 7.40	Roanova O. S. [A66] <i>The Riemann problem for equations of cold plasma</i>
19.40 – 20.05	15.40 – 16.05	14.40 – 15.05	7.40 – 8.05	Kaptsov E. I., Dorodnitsyn V. A., Meleshko S. V. [A67] <i>Conservativeness of invariant finite-difference schemes</i>
20.05 – 20.30	16.05 – 16.30	15.05 – 15.30	8.05 – 8.30	Meleshko S. V., Siriwat P. [A68] <i>Complete set of reciprocal transformations of 2D stationary gasdynamics</i>
Coffee Break				
<i>Chair: Meleshko, S. V.</i>				
21.10 – 21.35	17.10 – 17.35	16.10 – 16.35	9.10 – 9.35	Bobrovskiy V. S., Sinitsyn A. V. [A69] <i>Mathematical modelling of proton migration inside earthquake source by Vlasov-Maxwell system</i>
21.35 – 22.00	17.35 – 18.00	16.35 – 17.00	9.35 – 10.00	Chernykh G. G., Fomina A. V., Moshkin N. P. [A70] <i>Dynamics of a heated turbulent mixing zone in a linear stratified medium</i>

Friday, 27 August 2021

Thai/NVB	Moscow	Europe	US CDT	
				<i>Chair: Dobrokhotov, S. Yu.</i>
13.00 – 13.25	9.00 – 9.25	8.00 – 8.25	1.00 – 1.25	<u>Pukhnachev V. P.</u> [A71] <i>Reading N.N. Yanenko's papers</i>
13.25 – 13.50	9.25 – 9.50	8.25 – 8.50	1.25 – 1.50	<u>Alekseev G. V., Brizitskii R. V.</u> [A72] <i>Control problems in magnetohydrodynamics for viscous incompressible fluid</i>
13.50 – 14.15	9.50 – 10.15	8.50 – 9.15	1.50 – 2.15	<u>Vedenyapin V. V., Fimin N. N., Chechetkin V. M., Russkov A. A., Voronina M. Yu.</u> [A73] <i>On the derivation of the equations of electrodynamics and gravitation from the least action principle and the models of the Universe</i>
14.15 – 14.40	10.15 – 10.40	9.15 – 9.40	2.15 – 2.40	<u>Vasyutkin S. A., Chupakhin A. P.</u> [A74] <i>Differentiation of similar matrices</i>
14.40 – 15.05	10.40 – 11.05	9.40 – 10.05	2.40 – 3.05	<u>Millionshchikov D.</u> [A75] <i>Liouville equation and combinatorial polynomials</i>
Coffee Break				
				<i>Chair: Moyo S.</i>
15.20 – 15.45	11.20 – 11.45	10.20 – 10.45	3.20 – 3.45	<u>Bulatov M. V., Solovarova L. S.</u> [A76] <i>On collocation-variation difference schemes for differential-algebraic equations</i>
15.45 – 16.10	11.45 – 12.10	10.45 – 11.10	3.45 – 4.10	<u>Solovarova L. S., Phuong T. D.</u> [A77] <i>On difference schemes for the second-order differential-algebraic equations</i>
16.10 – 16.35	12.10 – 12.35	11.10 – 11.35	4.10 – 4.35	<u>Anikin A. Yu., Rykhlov V. V.</u> [A78] <i>Asymptotics for graphene in magnetic field</i>
Coffee Break				
				<i>Chair: Moyo S.</i>
16.50 – 17.15	12.50 – 13.15	11.50 – 12.15	4.50 – 5.15	<u>Nadjafikhah M., Mahdipour–Sh. A.</u> [A79] <i>Symmetry analysis of the cylindrical Helmholtz equation</i>
17.15 – 17.40	13.15 – 13.40	12.15 – 12.40	5.15 – 5.40	<u>Nakpim W., Meleshko S. V.</u> [A80] <i>Conservation laws of the relativistic gas dynamics equations in Lagrangian coordinates</i>
17.40 – 18.05	13.40 – 14.05	12.40 – 13.05	5.40 – 6.05	<u>Il'in V. P.</u> [A02] <i>The strategies and tactics of an intelligent mathematical modeling</i>
18.05 – 18.30	14.05 – 14.30	13.05 – 13.30	6.05 – 6.30	<u>Vladimirov V. A.</u> [A81] <i>Distinguished limits and drifts: between nonuniqueness and universality</i>
18.30 – 18.35	14.30 – 14.35	13.30 – 13.35	6.30 – 6.35	Closing Remarks by Sergey V. Meleshko