

Ministry of Education and Science of Ukraine
Ivan Franko National University of Lviv
Donetsk National University
Institute of Applied Mathematics and Mechanics
of the National Academy of Sciences of Ukraine

Third International Conference
for Young Mathematicians
on Differential Equations and Applications
Dedicated to Yaroslav Lopatynsky

PROGRAM

3 – 6 November, 2010, Lviv, Ukraine

Lviv 2010

Session will take place in the Student Club of the Main Building of
Ivan Franko National University of Lviv

Address: Universytetska Str., 1, 79000, Lviv

3 – 6 November, 2010, Lviv, Ukraine

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- Ivan Franko National University of Lviv
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Wednesday, November 3

Morning Session

- 10⁰⁰ – 10¹⁰ Opening of the Conference.
- 10¹⁰ – 11⁰⁰ **Burskii V.P.** *Donetsk, Ukraine*. Well-posedness conditions for general boundary-value problems for elliptic equations.
- 11⁰⁰ – 11⁵⁰ **Mel'nyk T.A.** *Kyiv, Ukraine*. Direct method of homogenization of optimal control problems involving boundary-value problems in perturbed domains.
- 11⁵⁰ – 12²⁰ **Kyrylych V.M.** *Lviv, Ukraine*. Nicoletti type hyperbolic problem with free boundary and horizontal characteristics.
- 12³⁰ – 14⁰⁰ Guided tour.

Afternoon Session

- 15⁰⁰ – 15¹⁵ **Mashiyev R.A., Avci M.** *Diyarbakir, Turkey*. Existence of solutions for nonuniformly elliptic equations of $p(x)$ -laplacian type.
- 15¹⁵ – 15³⁰ **Çekiç B., Mashiyev R.A.** *Diyarbakir, Turkey*. Eigenvalues of $p(t)$ -laplacian Dirichlet problem.
- 15³⁰ – 15⁴⁵ **Kučera P.** *Prague, Czech Republic*. Remark on strong solutions of the nonsteady Navier-Stokes equations in convex domains.
- 15⁴⁵ – 16⁰⁰ **Buryachenko K.O.** *Donetsk, Ukraine*. Condition of solvability of the Dirichlet problem for fourth order differential equation with non zero right-hand side.
- 16⁰⁰ – 16¹⁵ **Burskii V.P., Kurakina I.I.** *Donetsk, Ukraine*. Formal solution to general equivariant mixed problem for the heat equation in disk.
- 16¹⁵ – 16³⁰ **Agibalova A.V.** *Donetsk, Ukraine*. On the completeness for the systems of differential equations.
- 16³⁰ – 16⁴⁵ **Limanskii D.V.** *Donetsk, Ukraine*. On differential operators subordinated to the tensor product of two elliptic polynomials in $C(\mathbb{R}^n)$.
- 16⁴⁵ – 17⁰⁰ **Dudik O.A.** *Simferopol, Ukraine*. On operator approach to problem of small motions and normal vibrations of pendulum with cavity partially filled up by capillary viscous liquid.
- 17⁰⁰ – 17¹⁵ **Bondarenko N.S.** *Donetsk, Ukraine*. Thermo-elastic state of transtropic plate under local heating which leads to bending of plate.
- 17¹⁵ – 17⁴⁵ Coffee break.

17⁴⁵ – 18⁰⁰ **Azizbekov E.I., Mehraliyev Ya.T.** *Baku, Azerbaijan*. Solution of a boundary value problem for a fourth order pseudohyperbolic equation with non-classical boundary conditions.

18⁰⁰ – 18¹⁵ **Stepanova K.V.** *Donetsk, Ukraine*. Qualitive properties of weak solution to nonlinear equation of parabolic type.

18¹⁵ – 18³⁰ **Lahno V.I., Stohnii V.I., Kuvika M.V.** *Poltava, Kyiv, Ukraine*. Group clasification of nonlinear equation of the Kolmohorov type.

18³⁰ – 18⁴⁵ **Levin V.M., Hrytsuk Yu.V., Mytrakov V.O., Hevlich I.H.** *Makiivka, Ukraine*. Initial-boundary value problem for system of integro-differential equations as model of progressive damage of reinforced viscous-elastic-plastic fold.

18⁴⁵ – 19⁰⁰ **Lukyanenko V.A., Kozlova M.G., Hazova U.A.** *Simferopol, Ukraine*. Nonlinear integral equations of the first type with unknown shift.

19⁰⁰ – 19¹⁵ **Martynyuk O.M.** *Odesa, Ukraine*. Hochstadt-Liberman theorem for Stieltjes string.

19¹⁵ – 19³⁰ **Vashpanova T.Yu.** *Odesa, Ukraine*. On existence of surface deformations with stationary LGT-network.

Thursday, November 4

Morning Session

9⁰⁰ – 9⁵⁰ Ivasyshen S.D. *Kyiv, Ukraine.* Ya.B. Lopatynsky and advancement of parabolic systems theory.

9⁵⁰ – 10⁴⁰ Samoilenko A.M., Prykarpatsky A.K. *Kyiv, Ukraine, Drohobych, Ukraine, Kraków, Poland.* The Ya. Lopatynsky and I. Skrypnik differential-geometric works on a generalized de-Rham-Hodge type theory of differential complexes.

10⁴⁰ – 11¹⁰ Coffee break.

11¹⁰ – 11⁴⁰ Drin' Ya.M. *Chernivtsi, Ukraine.* Classic and generalized nonlocal problems for parabolic pseudodifferential equations with non-smooth symbols.

11⁴⁰ – 11⁵⁵ Serheyeva L.M., Bihun Ya.Yo. *Chernivtsi, Ukraine.* On invariant manifolds for delay differential equations.

11⁵⁵ – 12¹⁰ Medynsky I.P. *Lviv, Ukraine.* Correct solvability of the Cauchy problem for a quasilinear ultraparabolic equation of Kolmogorov type.

12¹⁰ – 12²⁵ Ivasyshen S.D., Pasichnyk H.S. *Kyiv, Ukraine, Chernivtsi, Ukraine.* On the Cauchy problem for Sonin equation with decreasing coefficients.

12²⁵ – 12⁴⁰ Ivasyuk H.P. *Chernivtsi, Ukraine.* Investigation of initial value problems for some generalized class of the parabolic systems.

12⁴⁰ – 12⁵⁵ Tupkalo I.S. *Chernivtsi, Ukraine.* Cauchy problem for a class of evolutionary equations within the Bessel operator of the infinity order.

12⁵⁵ – 13¹⁰ Chabanyuk Ya.M., Kukurba V.R., Khimka U.T. *Lviv, Ukraine.* Compensating operator for procedure of stochastic optimization in semi-Markov space.

13¹⁰ – 13⁴⁰ Samoilenko V.Hr., Samoilenko Yu.I. *Kyiv, Ukraine.* Asymptotic soliton type solution to Korteweg-de Vries equation.

Afternoon Session

15⁰⁰ – 15³⁰ Ivanchov M.I., Bokalo M.M. *Lviv, Ukraine.* Life and scientific work of Professor S.P. Lavrenyuk.

15³⁰ – 15⁴⁵ Pukach P.Ya. *Lviv, Ukraine.* On non-existence of global solution to mixed problem for nonlinear evolution equation.

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$15^{45} - 16^{00}$ **Buhrii O.M., Hurnyak I.Ya., Panat O.T.** *Lviv, Ukraine.* Some hyperbolic variational inequalities with variable exponent of nonlinearity.

$16^{00} - 16^{15}$ **Golovaty Yu.D., Marciniak-Czochra A., Ptashnyk M.B.** *Lviv, Ukraine, Heidelberg, Aachen, Germany.* Stability analysis of nonconstant stationary solutions of a system of a reaction-diffusion equation coupled with ordinary differential equations.

$16^{15} - 16^{30}$ **Bazylyak H.R.** *Lviv, Ukraine.* Mixed problem for nonlinear parabolic equation of the fourth order in unbounded with respect to time domain.

$16^{30} - 16^{45}$ **Nechepurenko M.O.** *Lviv, Ukraine.* Nonexistence of global solution to mixed problem for nonlinear system with integral perturbation in unbounded with respect to time domain.

$16^{45} - 17^{00}$ **Bokalo T.M., Buhrii O.M., Savits'ka T.M.** *Lviv, Ukraine.* On unique solvability of the double nonlinear parabolic variational inequality with variable exponent of nonlinearity.

$17^{00} - 17^{30}$ Coffee break.

$17^{30} - 17^{45}$ **Lenyuk M.P., Lenyuk O.M.** *Chernivtsi, Ukraine.* Hybrid integral transformation of Legendre - Fourier - Euler type on polar axis $r \geq R_0 > 0$.

$17^{45} - 18^{00}$ **Blazhevsky S.H.** *Chernivtsi, Ukraine.* Simulation of diffusion processes in non-homogeneous media with soft boundaries by method of hybrid differential Fourier-Euler-Fourier operator.

$18^{00} - 18^{15}$ **Konarowska M.I.** *Chernivtsi, Ukraine.* On problem without initial conditions for quasilinear singular parabolic system.

$18^{15} - 18^{30}$ **Perun H.M.** *Chernivtsi, Ukraine.* Cauchy problem for quasilinear parabolic stochastic equation with Poisson perturbations.

$18^{30} - 18^{45}$ **Spizhavka D.** *Chernivtsi, Ukraine.* Multipoint problems for singular evolution equations.

19^{00} Welcome party.

Friday, November 5

Morning Session

$9^{00} - 9^{50}$ **Ptashnyk B.Yo.** *Lviv, Ukraine.* Multipoint problems for linear evolution equations.

$9^{50} - 10^{40}$ **Ivancho M.I.** *Lviv, Ukraine.* Inverse problems and free boundary problems for parabolic equations.

$10^{40} - 11^{10}$ Coffee break.

$11^{10} - 11^{25}$ **Il'kiv V.C., Savka I.Ya., Symotyuk M.M.** *Lviv, Ukraine.* Nonlocal boundary value problems for PDEs of the infinite order with algebraic dependent coefficients.

$11^{25} - 11^{40}$ **Tymkiv I.R.** *Lviv, Ukraine.* Multipoint problem for $\bar{2}b$ -parabolic equation.

$11^{40} - 12^{10}$ **Sandrakov G.V.** *Kues, Ukraine.* Homogenization of variational inequalities.

$12^{10} - 12^{25}$ **Boyko S.B., Sandrakov G.V.** *Kyiv, Ukraine.* Mathematical modelling of hydrodynamics problems with phase transitions.

$12^{25} - 12^{40}$ **Culev V., Orlov V., Pricop V., Puțuntică V.** *Chișinău, Moldova.* About the model of tuberculosis natural dynamic.

$12^{40} - 12^{55}$ **Bondar O.O.** *Luhansk, Ukraine.* Manifold of elliptic operators with fixed multiplicity of some eigenvalue.

$12^{55} - 13^{10}$ **Zavorotynsky A.V.** *Chernihiv, Ukraine.* Weak elliptic boundary value problems with parameter with additional unknown functions on boundary. Apriori estimates.

$13^{10} - 13^{25}$ **Khoma-Mohyl's'ka S.H., Khoma N.H., Khokhlova L.H.** *Ternopil, Ukraine.* Existence of 2π -periodic solutions to hyperbolic equations.

Afternoon Session

$15^{00} - 15^{15}$ **Wilczynski P.** *Kraków, Poland.* Periodic solutions of some planar nonautonomous ODEs.

$15^{15} - 15^{30}$ **Khrabustovskyi A.V.** *Kharkiv, Ukraine.* Homogenization of eigenvalue problem for Laplace-Beltrami operator on Riemannian manifold consisting of two domains connected by many thin tubes.

$15^{30} - 15^{45}$ **Sadovyj D.Yu.** *Kyiv, Ukraine.* Homogenization of quasilinear parabolic problems with alternating nonlinear boundary conditions in a thick two-level junction of type $3 : 2 : 2$.

$15^{45} - 16^{00}$ **Vakal Yu.** *Kyiv, Ukraine.* Perturbed ultrasubharmonic systems with one-and-half degrees of freedom closed to Hamiltonian ones.

$16^{00} - 16^{15}$ **Krylova A.S.** *Kyiv, Ukraine.* Spectral problem for fragment of networks and grids.

$16^{15} - 16^{30}$ **Pol'shcha H.S., Lisnyak V.S.** *Kyiv, Ukraine.* Integral geometry of conics on hyperboloids.

$16^{30} - 16^{45}$ **Lisnyak V.S.** *Kyiv, Ukraine.* Differential-geometrical objects of magnetic field.

$16^{45} - 17^{00}$ **Skalak Z.** *Prague, Czech Republic.* On the large time concentration of energy in solutions to the Navier-Stokes equations in the whole 3D space.

$17^{00} - 17^{30}$ Coffee break.

$17^{30} - 17^{45}$ **Anikushyn A.V., Nomirovsky D.A.** *Kyiv, Ukraine.* Generalized optimal control of systems described by linear integro-differential equations with nonnegatively defined integral operators.

$17^{45} - 18^{00}$ **Hotsulenko V.V.** *Zhovti Vody, Ukraine.* Asymptotic analysis of optimal control problem for Behnard system in generalized Couette cell under perforation by think cylinders.

$18^{00} - 18^{15}$ **Pranevich A.F.** *Grodno, Belarus.* \mathbb{R} -differentiable integrals and last multipliers of multidimensional differential systems.

$18^{15} - 18^{30}$ **Pranevich P.F.** *Grodno, Belarus.* Rational-parametrical solutions to algebraic differential equations.

$18^{30} - 18^{45}$ **Daranchuk S.N.** *Grodno, Belarus.* Method of building of first integrals for autonomous linear nonhomogeneous systems in total differentials.

$18^{45} - 19^{00}$ **Aliluiko A.M., Yer'omenko V.O.** *Ternopil, Ukraine.* On robust control for differential system of the second order.

$19^{00} - 19^{15}$ **Chuiko S.M., Chuiko O.S., Chuiko A.S.** *Sloviansk, Ukraine.* Periodical solutions of impulse boundary value problems of "interface conditions" type for delay systems.

$19^{15} - 19^{30}$ **Amirfakharian M., Keighobadi S.** *Tehran, Iran.* Solution for the Fitzhugh-Nagumo equation with the variational iteration method.

Saturday, November 6

Morning Session

$9^{00} - 9^{15}$ **Bihun O., Prytula M.** *Moorhead, USA, Lviv, Ukraine.* Existence of solutions and numerical tests for Calogero discrete approximations of ODEs.

$9^{15} - 9^{30}$ **Lopushanska H.P., Pasichnyk O.V.** *Lviv, Ukraine.* Solvability of the Cauchy problem for equation with fractional time derivative in the space of distributions.

$9^{30} - 9^{45}$ **Chmyr O.Yu.** *Lviv, Ukraine.* On behaviour of solution to generalized normal boundary value problem for quasilinear parabolic system near the domain's boundary.

$9^{45} - 10^{00}$ **Protsakh N.P.** *Lviv, Ukraine.* On mixed problem for ultraparabolic equation with integral term.

$10^{00} - 10^{15}$ **Andrusyak R.V.** *Lviv, Ukraine.* Quasilinear hyperbolic Stefan problem with nonlocal boundary value conditions.

$10^{15} - 10^{30}$ **Burdeina N.O.** *Lviv, Ukraine.* Free boundary problem for hyperbolic system of the general quasilinear equations.

$10^{30} - 10^{45}$ **Pelyushkevych O.V.** *Lviv, Ukraine.* Solution coupling along an unknown curve for a hyperbolic problem in sector.

$10^{45} - 11^{15}$ Coffee break.

$11^{15} - 11^{30}$ **Bokalo M.M.** *Lviv, Ukraine.* Problems without initial conditions for some class of evolutionary equations.

$11^{30} - 11^{45}$ **Domanska O.V.** *Lviv, Ukraine.* Boundary value problems for elliptic equations of the high orders with anisotropic variable nonlinearity.

$11^{45} - 12^{00}$ **Podisuk M.** *Bangkok, Thailand.* Numerical solution of iterative ordinary differential equation by integration method.

$12^{00} - 12^{15}$ **Kanoknapa E.** *Bangkok, Thailand.* Numerical solution of iterative ordinary differential equation by integration method.

$12^{15} - 12^{30}$ **Farnam B.** *Tehran, Iran.* Transient free convective flow around an isothermal semi-infinite vertical plate with temperature gradient dependent on heat source and mass transfer.

$12^{30} - 12^{45}$ **Rasouli S.H.** *Babol, Iran.* On the uniqueness and nonexistence of positive weak solutions for nonlinear multiparameter elliptic systems involving the (p, q) -laplacian.

$12^{45} - 13^{00}$ **Fluid V.M., Golovaty Yu.D.** *Opole, Poland, Lviv, Ukraine.* Singular perturbed boundary value problem for hyperbolic equation of the second order on graph.

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13⁰⁰–13¹⁵ Hrabchak H.Ye. *Lviv, Ukraine.* Asymptotics of eigenvibrations of string network with contrast mass density.

13¹⁵–13³⁰ Sukhorol'sky M.A., Lyubyts'ka O.Z. *Lviv, Ukraine.* On numerical computation for solving boundary value problem for Helmholtz equation in 2D-domains.

Afternoon Session

15⁰⁰–15¹⁵ Man'ko S.S. *Lviv, Ukraine.* Scattering on the singular potential localized at the vertex of star graph.

15¹⁵–15³⁰ Hut V. *Lviv, Ukraine.* Highfrequency asymptotics of eigenfunctions for contrast vibrating systems.

15³⁰–15⁴⁵ Shevchuk R.V. *Lviv, Ukraine.* Nonhomogeneous diffusion processes on halfline generated by solution of parabolic initial boundary value problem with integral term in boundary value condition.

15⁴⁵–16⁰⁰ Strybko O. *Lviv, Ukraine.* On localization principle of solutions to Cauchy problem for a class of degenerated parabolic equation.

16⁰⁰–16¹⁵ Hryntsiv N.M. *Lviv, Ukraine.* Free boundary value problem for weakly degenerate parabolic equation.

16¹⁵–16³⁰ Savits'ka T.M. *Lviv, Ukraine.* Inverse problem for parabolic equation in the weakly general degenerated domain.

16³⁰–16⁴⁵ Vlasov V. *Lviv, Ukraine.* An inverse problem for a strongly degenerate two-dimensional heat equation.

16⁴⁵ Closing of the Conference.

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