

## PROGRAM

Zhitomir, 19 – 26 August 2007

### INTERNATIONAL CONFERENCE ON COMPLEX ANALYSIS AND WAVE PROCESSES IN MECHANICS

Monday, 20 August

14.00 – 14.15 **Opening**

AFTERNOON SESSION

Chairman – Professor P. M. Tamrazov

- 14.15 – 15.05 **M. Lanza de Cristoforis** (Padova, Italy)  
*Singular perturbation problem in potential theory.  
A functional analytic approach*
- 15.05 – 15.55 **O. S. Limarchenko** (Kiev, Ukraine)  
*Methods of analytical and nonlinear mechanics in dy-  
namics or reservoirs with liquid*
- 16.25 – 16.55 **M. Dalla Riva** (Padova, Italy)  
*The layer potentials of some constant coefficient op-  
erators: real analytic dependence upon perturbation  
of the density, the domain and the coefficients*
- 16.55 – 17.25 **R. Salimov** (Donetsk, Ukraine)  
*Differentiability and linear absolute continuity of lo-  
cally integrable  $Q$ -homeomorphisms*

Tuesday, 21 August

MORNING SESSION

Chairman – O. S. Limarchenko

- 10.00 – 10.30 **G. Matarazzo, M. Pecoraro, L. Bochicchio**  
(Salerno, Italy)  
*About bio-mechanic behavior of an osteonic lamella.  
Theoric-experemental approach*
- 10.30 – 11.00 **G. Matarazzo, L. Buonanno** (Salerno, Italy)  
*Dynamics of liquid with a free surface in a reservoir  
of conic shape*

- 11.00 – 11.20 **O. V. Gavrilenko** (Kiev, Ukraine)  
*Problem of collision of spherical body with cavity surface*
- 11.40 – 12.00 **V. O. Bilyi, S. V. Sinchilo** (Kiev, Ukraine)  
*On propagation of nonlinear 2D transversal wave in composites with whiskered fiber*
- 12.00 – 12.20 **I. M. Khotenko, O. O. Khotenko, Ya. V. Symchuk** (Kiev, Ukraine)  
*Second-degree nonlinear torsion hyperelastic waves in isotropic cylinders*
- 12.20 – 12.50 **C. Cattani** (Salerno, Italy),  
**J. Rushchitsky** (Kiev, Ukraine)  
*To fundamental aspects of analysis of the Signorini's nonlinear elastic model*

#### AFTERNOON SESSION

Chairman – Professor O. S. Limarchenko

- 14.00 – 14.50 **J. Rushchitsky** (Kiev, Ukraine)  
*On nonlinear waves in materials with micro- and nanostructures*
- 14.50 – 15.40 **I. Selezov** (Kiev, Ukraine)  
*Modelling of shallow water wave propagation over irregular bottom*
- 16.00 – 16.20 **Yu. E. Vasilevskii** (Kiev, Ukraine)  
*Nonlinear model of dynamics of pipeline with high-speed liquid flow*
- 16.20 – 16.40 **A. V. Konstantinov** (Kiev, Ukraine)  
*Oscillations of liquid with a free surface inder presence of given geometrical nonlinearities*
- 16.40 – 17.00 **B. P. Kovalchuk** (Kiev, Ukraine)  
*Nonlinear dynamics of liquid with a free surface in rectangular reservoir, which performs inclined motion*
- 17.00 – 17.20 **O. V. Popova** (Kiev, Ukraine)  
*Nonlinear oscillations of stratified liquid with a free surface in rectangular reservoir*
- 17.20 – 17.40 **I. Yu. Semenova** (Kiev, Ukraine)  
*Dynamics of combined motion of parabolic reservoir with partially filled ideal liquid*

**Wednesday, 22 August**

MORNING SESSION

Chairman – Professor M. Lanza de Cristoforis

- 10.00 – 10.50 **A. Fernández Arias** (Madrid, Spain)  
*Applications of  $\Gamma$ -lines to the value distribution theory of algebroid functions*
- 11.20 – 12.10 **V. K. Maslyuchenko, V. V. Mikhailyuk**  
(Chernivtsi, Ukraine)  
*Partial differential equations with minimal restrictions*
- 12.10 – 12.40 **A. Fedullo, R. de Luca** (Salerno, Italy),  
**V. A. Gasanenko** (Kiev, Ukraine)  
*Small parameter in systems of differential equations connected with Josephson junctions*

AFTERNOON SESSION

Chairman – Yu. B. Zelinskii

- 14.00 – 14.30 **V. K. Maslyuchenko, V. V. Mikhailyuk, O. I. Filipchuk** (Chernivtsi, Ukraine)  
*On the set of points of total continuity of  $K_h C$ -functions taking their values in Moore spaces*
- 14.30 – 15.00 **V. Kretsu, V. K. Maslyuchenko**  
(Chernivtsi, Ukraine)  
*On the continuity of functions, which are continuous in the sence of Stallings*
- 15.00 – 15.30 **O. O. Karlova, O. V. Sobchuk**  
(Chernivtsi, Ukraine)  
*On the continuity of functions of the first Baire class*
- 16.00 – 16.30 **V. V. Nesterenko** (Chernivtsi, Ukraine)  
*On the weak horizontal quasicontinuity*
- 16.30 – 17.00 **O. Fotii** (Chernivtsi, Ukraine)  
*Connections between different types of continuity of multivalued mappings*
- 17.00 – 17.30 **T. Osipchuk** (Kiev, Ukraine)  
*On analytical conditions for local linear convexity in  $\mathbb{H}^n$*

## Thursday, August 23

### MORNING SESSION

Chairman – Professor A. Fernández Arias

- 10.00 – 10.50 **Yu. B. Zelinskii, M. V. Tkachuk** (Kiev, Ukraine)  
*On the fiber linear convexity*
- 11.20 – 12.10 **A. V. Pokrovskii** (Kiev, Ukraine)  
*Removability of compact sets for solutions of second linear order elliptic equations in nondivergence form*
- 12.10 – 12.40 **Ye. Sevostyanov** (Donetsk, Ukraine)  
*Sokhotski-Weierstrass theorem for mappings with finite length distortion*
- 12.40 – 13.10 **D. Kovtonyuk** (Donetsk, Ukraine)  
*On the ACL-property of locally integrable hyper  $Q$ -homeomorphisms*

### AFTERNOON SESSION

Chairman – Professor S. A. Plaksa

- 13.40 – 14.10 **O. F. Gerus** (Zhitomir, Ukraine),  
**V. N. Kutrunov** (Tumen, Russia)  
**M. V. Shapiro** (Mexico City, Mexico)  
*On the spectrum of operators connected with the singular Cauchy integral*
- 14.10 – 14.40 **S. V. Grishchuk** (Kiev, Ukraine) *Integral expressions of generalized axial-symmetric potentials*
- 14.40 – 15.10 **Yu. V. Vasil'eva** (Kiev, Ukraine)  
*Riemann boundary value problem on an open Jordan rectifiable curve*

## Saturday, August 25

### MORNING SESSION

Chairman – Professor A. V. Pokrovskii

- 10.00 – 10.50 **S. A. Plaksa** (Kiev, Ukraine)  
*Cauchy–Riemann conditions for spatial harmonic functions*
- 11.20 – 12.10 **E. P. Dolzhenko** (Moscow, Russia)  
*On the boundary smoothness of conformal mappings of arbitrary Jordan domains*
- 12.10 – 12.40 **O. W. Karupu** (Kiev, Ukraine)  
*On some generalization and inversion of Kellog’s type theorems*

### AFTERNOON SESSION

Chairman – Professor A. V. Pokrovskii

- 14.00 – 14.30 **V. D. Zalizko** (Kiev, Ukraine)  
*Jackson inequality for coconvex approximation of periodic functions*
- 14.30 – 15.00 **Ya. V. Novak** (Kiev, Ukraine)  
*On some local approximate properties of simplest functions*
- 15.00 – 15.30 **A. Golberg** (Ramat-Gan, Israel)  
*Local geometric characteristics of generalized quasi-conformal mappings*
- 16.00 – 16.30 **A. V. Zhuravskaya** (Kiev, Ukraine)  
*Removable sets for solutions of second order quasilinear elliptic equations in divergence form*
- 16.30 – 17.00 **I. Yu. Vygovskaya** (Borispol, Ukraine)  
*Combinatorial theorems for generalized convex sets*
- 17.00 – 17.30 **A. I. Gerasin** (Kiev, Ukraine)  
*The solution of the Buffon–Silvester problem in  $\mathbb{R}^n$*

**Sunday, August 26**

## MORNING SESSION

Chairman – Professor O. F. Gerus

- 10.00 – 10.30 **A. L. Targonskii** (Zhitomir, Ukraine)  
*Estimates for products of inner radii of open sets*
- 10.30 – 11.00 **V. E. Vjun** (Kiev, Ukraine)  
*On one estimate for inner radii of disjoint domains*
- 11.00 – 11.30 **G. P. Bakhtina** (Kiev, Ukraine)  
*Upper bounds for products of inner radii of disjoint domains*
- 12.00 – 12.30 **A. A. Pogoruy** (Zhitomir, Ukraine)  
*Zeroes of polynomial in commutative algebras*
- 12.30 – 13.00 **D. A. Mierzejewski** (Zhitomir, Ukraine)  
*Split tensor products of quaternionic modules*
- 13.00 – 13.30 **V. S. Shpakivskii** (Zhitomir, Ukraine)  
*Solution of general linear antiquaternionic equations*
- 13.30 – 14.00 **S. A. Okhrimenko** (Zhitomir, Ukraine)  
*Moduli of a "cross" family of composite arcs in multiply connected nonorientable domains on a Riemannian Mobius strip*

**Kiev, 27 August – 2 September 2007**  
**INTERNATIONAL CONFERENCE**  
**ON MATHEMATICAL METHODS**  
**OF NONLINEAR MECHANICS**

**Monday, 27 August**

10.00 – 10.15    **Opening**

MORNING SESSION

Chairman – Professor V. V. Sharko

10.15 – 11.05    **A. M. Samoilenko** (Kiev, Ukraine)  
*Development of asymptotical methods of nonlinear differential equations in Ukraine*

11.35 – 12.25    **Yu. A. Mitropolskii** (Kiev, Ukraine)  
*Development of methods of nonlinear mechanics and some nearest prospects*

AFTERNOON SESSION

Chairman – Professor V. G. Samoilenko

15.00 – 15.30    **O. P. Kravchenko** (Kiev, Ukraine)  
*Analysis of nonlinear electric circuits by the Bogolyubov averaging method*

15.35 – 16.05    **Yu. I. Samoilenko** (Kiev, Ukraine)  
*The Cauchy problem for the Korteweg–de Vries equations with variable coefficients and small dispersion*

16.35 – 17.05    **A. V. Korol'** (Kiev, Ukraine)  
**B. Yesymbetov** (Uzbekistan)  
*Analysis of asymptotic properties of roots of characteristic quasipolynomials*

17.10 – 17.40    **K. K. Yelgondiev** (Uzbekistan)  
*Analysis of processes of heat propagation in bodies under presence of heat sources of pulse nature*

**Tuesday, 28 August**

MORNING SESSION

Chairman – Professor A. M. Samoilenko

- 10.00 – 10.50 **A. A. Dorogovtsev** (Kiev, Ukraine)  
*Stochastic differential equations with interaction*
- 11.20 – 11.50 **M. I. Shkil** (Kiev, Ukraine)  
*Asymptotic integration of systems of linear singular perturbed differential equations with degeneration at a point*
- 11.55 – 12.25 **V. G. Samoilenko** (Kiev, Ukraine)  
*Asymptotic solutions of singular perturbed differential equations with impulses*

AFTERNOON SESSION

Chairman – M. I. Shkil

- 15.00 – 15.30 **P. F. Samusenko** (Kiev, Ukraine)  
*Asymptotic integration of systems of linear singular perturbed differential equations with degeneration at a point*
- 15.35 – 16.05 **Yu. V. Sharko** (Kiev, Ukraine)  
*Impulse gradient systems*
- 16.35 – 17.05 **N. V. Skrypnik** (Odessa, Ukraine)  
*Averaging of fuzzy impulse differential equations*
- 17.10 – 17.40 **T. A. Komleva, A. I. Plotnikov, A. V. Plotnikov** (Odessa, Ukraine)  
*Averaging of fuzzy differential equations on finite segments*



**Wednesday, 29 August**

## MORNING SESSION

Chairman – Professor O. S. Limarchenko

- 10.00 – 10.50 **I. A. Lukovskii** (Kiev, Ukraine)  
*Development of modal methods in nonlinear theory of oscillations of viscous liquid in an empty of rigid body*
- 11.20 – 12.10 **B. Barkow, A. Steindl, H. Troger**  
(Wien, Austria)  
*Various approaches to control deployment of a tethered satellite*

## AFTERNOON SESSION

Chairman – Professor M. Ya. Barnyak

- 15.00 – 15.30 **V. T. Movchan, Ye. O. Shkvar** (Kiev, Ukraine)  
*Mathematical modelling of airfoil turbulent streamline with the purpose of its optimization*
- 15.35 – 16.05 **N. M. D'yachenko, E. V. Shashkova**  
(Zaporozhye, Ukraine)  
*On sliding with friction of nonplanar stamp on a border of shaggy sunspace*
- 16.35 – 17.05 **O. V. Gavrilenko** (Kiev, Ukraine)  
*Problem of collision of cylinder with cavity surface under supercavity flow*
- 17.10 – 17.40 **E. M. Bytsan** (Kiev, Ukraine)  
*Some peculiarities of structure of the generalized rheological body*

**Thursday, 30 August**

MORNING SESSION

Chairman – Professor I. A. Lukovskii

- 10.00 – 10.50 **O. S. Limarchenko** (Kiev, Ukraine)  
*Dynamics of ideal liquid with a free surface: the problem of construction of the model of minimal dimension*
- 11.20 – 12.10 **I. T. Selezov** (Kiev, Ukraine)  
*Propagation of water waves over irregular bottom. Theory and applications*

AFTERNOON SESSION

Chairman – Professor I. T. Selezov

- 15.00 – 15.30 **M. Ya. Barnyak** (Kiev, Ukraine)  
*Asymptotic solution of the problem of normal oscillations of viscous liquid in direct circular cylinder*
- 15.35 – 16.05 **A. V. Konstantinov** (Kiev, Ukraine)  
*Nonlinear dynamics of capillary liquid with a free surface in weak gravity field*
- 16.35 – 17.05 **I. Yu. Semenova** (Kiev, Ukraine)  
*Nonlinear dynamic model for combined motion of reservoir of parabolic shape partially filled by liquid*
- 17.10 – 17.40 **Yu. I. Samoilenko** (Kiev, Ukraine)  
*On potential of transformation of energy of heat fluctuations of one-temperature ensemble of mesoscopic level into energy of coherent controlling oscillations*

**Friday, 31 August**

## MORNING SESSION

Chairman – Professor P. M. Tamrazov

- 10.00 – 10.50 **V. V. Sharko** (Kiev, Ukraine)  
*Flows on manifolds with torus non-wandering set*
- 11.20 – 11.50 **Yu. Yu. Trokhimchuk** (Kiev, Ukraine)  
*Denjoy's problems*
- 11.55 – 12.25 **B. Belaïdi** (Mostaganem, Algeria)  
*Relations between small functions and solutions of certain complex linear differential equations with meromorphic coefficients*

## AFTERNOON SESSION

Chairman – Professor Yu. B. Zelinskii

- 15.35 – 16.05 **A. O. Prishlyak** (Kiev, Ukraine)  
*Topological equivalence of the Morse–Smale gradient-like flows on three-dimensional manifolds with boundary*
- 15.35 – 16.05 **S. Maksimenko** (Kiev, Ukraine)  
*Diffeomorphisms preserving orbits of Hamilton vector fields on surfaces*
- 15.35 – 16.05 **Ye. Polulyakh** (Kiev, Ukraine)  
*On saddle points of continuous functions on a closed two-dimensional disc*
- 15.35 – 16.05 **I. A. Yurchuk** (Kiev, Ukraine)  
*On the representation of graphs as diagrams of pseudoharmonic functions defined on  $D^2$*

**Saturday, 1 September**

## MORNING SESSION

Chairman – Professor S. A. Plaksa

- 10.00 – 10.30 **S. I. Chujko** (Slavyansk, Ukraine)  
*The method of least squares in the theory of nonlinear boundary problems*
- 10.35 – 11.05 **V. V. Popov, E. S. Vakal, I. V. Gapyak** (Kiev, Ukraine)  
*Application of the method of boundary integral equations for boundary-value problems in domains with non-smooth boundaries*
- 11.10 – 11.40 **V. Mikhailets, N. Reva** (Kiev, Ukraine)  
*On the passage to a limit in linear boundary problems*
- 11.45 – 12.15 **V. Mikhailets, V. Molyboga** (Kiev, Ukraine)  
*Gaps in the spectrum of the Hill–Schrödinger operators: potentials-distributions*