

Annual International Conference

Days on Diffraction 2012

May 28 – June 1, 2012

St.Petersburg

Program

8.30 Registration & Coffee**9.40 Opening (Main Hall)**

	<i>Diffraction I</i> (Hall 311) Chair: Mikhail Lyalinov	<i>Numerical methods I</i> (Hall 106) Chair: Alexander Samsonov	<i>Recent advances in metamaterials</i> (Main Hall) Chair: Pavel Belov
9.50			Alexey Ustinov: Superconducting metamaterials
10.00	Vassily M. Babich: An outline of the Smirnov–Sobolev method		
10.20	Popov A.V., Zapunidi S.A.:	Konovalov Y.Y.: Iterative algorithms for computation convolutions of atomic functions including new family $ch_{a,n}$	A.K. Sarychev, S.O. Boyarintsev, A.L., Rakhmanov, K.I. Kugel, Yu.P. Sukhorukov: Natural metamaterials: Volume plasmons in manganites with nanoscale phase separation
10.35	Diffraction of elementary plane pulse at semi-infinite interface between two dielectric media		
10.40	Kirpichnikova N.Ya., Popov M.M.: Altered approach to shortwave diffraction by a prolate body	Belyayev Yu.N.: Calculations of transfer matrix by means of symmetric polynomials	
10.50			Krasnok, A., Miroshnichenko, A.E., Belov, P.; Kivshar, Yu.: All-dielectric optical nanoantennas
11.00	Thierry Gilles: Diffraction by a subwavelength concaved perfectly conducting wedge	Kostenko O.V.: On a numerical method of solution of a hypersingular integral equation of second kind	L.S. Dolin: Determination of invisible inhomogeneities of refractive index from eikonal equation
11.05			

11.20 Coffee Break

	<i>Localized waves I</i> (Hall 311) Chair: Maria Perel	<i>Numerical methods II</i> (Hall 106) Chair: Leonid Goray	<i>Spasers</i> (Main Hall) Chair: Andrey Sarychev
11.40			E.S. Andrianov, A.A. Pukhov, A.P. Vinogradov, A.V. Dorofeenko, A.A. Lisiansky: Collective excitations of spaser chains
11.50	E.V. Razueva, E.G. Abramochkin: Paraxial equation and Bessel functions of fractional order	Vdovicheva N.K., Sazontov A.G.: Numerical simulation of multipactor discharge on a dielectric surface	Parfenyev V.M., Vergeles S.S.:
12.00			Spaser in above threshold regime: the lasing frequency shift
12.10	S. Orlov, U. Peschel, T. Bauer, P. Banzer, G. Leuchs: Interaction of vector complex source beams with a linear polarizer and their subsequent analytical expansion into VSHs	Duk M.A., Samsonov A.M.: Early stage dynamics of the regulation network with microRNA	A.A. Zyablovsky, A.V. Dorofeenko, A.P. Vinogradov, A.A. Pukhov, E.S. Andrianov: Radiative properties of 2D array of spasers
12.15			
12.30	A.M. Radin, V.N. Kudashov: New type of unstable optical resonators	Alexandrova I.L., Pleshchinskii N.B.: Scanning periodic grating: diffraction problem and transmission problem	Shalin A.S., Sukhov S.V.: Plasmonic accelerator for nano-particles
12.45			A.A. Pukhov, E.S. Andrianov, A.P. Vinogradov, A.V. Dorofeenko, A.A. Lisiansky: Pattern formation in bistable spaser chains
12.50	V. Gusev: Theory of selfrefraction effect of intensive focusing acoustical beams	Angermann L., Yatsyk V.V., Yatsyk M.V.: Weak fields at multiple frequencies and effects of scattering and generation of waves by nonlinear layered media	I.A. Nechepurenko, A.V. Dorofeenko, Yu.E. Lozovik, A.A. Pukhov, E.A. Andrianov: Sensing by spaser
13.00			
13.10			

13.15 Lunch at Dom Kino restaurant

	<i>Mathematical approaches I</i> (Hall 106) Chair: Evgeny Korotyayev	<i>Bianisotropic metamaterials</i> (Main Hall) Chair: Mikhail Lapin
15.00	Borzov V.V., Damaskinsky E.V.: The differential equations for generalized parametric Chebyshev polynomials	Teemu Niemi, Antti O. Karilainen, Viktor Asadchy, Younes Ra'di, Sergei A. Tretyakov: Synthesis of bianisotropic arrays

15.20	Michel Rouleux: The semi classical Maupertuis–Jacobi	
15.30	correspondence: unstable spectrum	A.P. Slobozhanyuk, M. Lapine, P.A. Belov, I.V. Shadrivov, Y.S. Kivshar: Spiral particles for constructing nonlinear metamaterials
15.40	Demchenko M.N.: Nonunique continuation for the Maxwell system	
15.45		Albooyeh M. and Simovski C.R.: Electromagnetic characterization of metasurfaces in presence of substrate-induced bianisotropy
16.00	L. Barbanti, B.C. Damasceno, F.V. Alvarado: Quasi-solutions of ill-posed problems for causal operators on regulated functions in time scales	Mário G. Silveirinha, Nader Engheta: Effective-medium approach to electron waves in graphene superlattices
16.15		V. Klimov: Engineering of radiation of optically active molecules with chiral nano-meta-particles
16.20		

16.30 **Coffee Break**

	Mathematical approaches II (Hall 106) Chair: Michel Rouleux	Microwave metamaterials (Main Hall) Chair: Sergei Tretyakov
16.40	E. Korotyaev: Inverse problems, trace formulae for discrete Schrödinger operators	M. Lapine, L. Jelinek, R. Marques: Specific boundary effects in discrete metamaterials
17.00	V. Mikhaylov: Reconstructing the potential for the 1D Schrödinger equation from boundary measurements	
17.10		I.A. Karpov, M.R. Trunin: Experimental verification of electromagnetic cloaking at microwave frequencies with metamaterials
17.20	Zalipaev V.V.: Semiclassical analysis of tunneling through a smooth barrier in graphene monolayer	
17.25		Jelinek L.: Active metamaterials: theory, experiment, future
17.40	Pavlov B.S.: Zero-Range model for a dissipative operator	
17.55		Usanov D.A., Nikitov S.A., Skripal A.B., Ponomarev D.V.: Application of one-dimensional microwave photonic crystals for measurements of parameters of structures based on thin semiconductor layers
18.00		

18.10

	<i>Spectral theory methods I</i> (Hall 311) Chair: Tatiana Suslina	<i>Diffraction II</i> (Hall 106) Chair: Alexei Popov	<i>Magnonic crystals</i> (Main Hall) Chair: Alexei Ustinov
9.00	S.A. Nazarov: Spectral gaps in double-periodic structures		Nikitov S.A.: Spin-wave dynamics in lateral periodic and quasiperiodic magnetic micro- and nanostructures
9.20	Ruotsalainen K.M.: Computation of the band structure for water wave problems in periodic domains	V.N. Trukhin, D.P. Hor'kov, L.L. Samoilov: Edge diffraction in the scattering of focused terahertz radiation	
9.40	Taskinen J., Nazarov S.A., Ruotsalainen K.: Essential spectrum of a periodic elastic waveguide may contain arbitrarily many gaps	Ya.L. Bogomolov, E.S. Semenov, A.D. Yunakovsky: Nonlinear shapes of linear collider. Mathematical aspects	Sheshukova S.E., Beginin E.N., Morozova M.A., Nikitov S.A.: Microwave pulse passing through 1D finite magnonic crystal
9.45			
10.00	Fliss S.: Dirichlet-to-Neumann operators in periodic waveguides. Application to the computation of trapped modes	L.I. Goray: Energy-absorption calculus for multi-boundary diffraction gratings	Sakharov V.K., Khivintsev Y.V., Filimonov Y.A., Nikitov S.A.: FMR investigation of bicomponent magnonic crystals based on cobalt and Permalloy
10.15			Lisenkov I.V., Nikitov S.A.: Local resonance band gaps in ferromagnetic nanostructured composites
10.20	Pérez, M.E.: Vibrations of high-contrast media: eigenmodes, quasi-modes and long-time approaches	R.P. Moiseyenko, J. Liu, S. Benchabane, N.F. Declercq, V. Laude: Scholte–Stoneley waves on 1D and 2D phononic crystal gratings	
10.30			

10.40

Coffee Break

	<i>Spectral theory methods II</i> (Hall 311) Chair: Serguei Nazarov	<i>Numerical methods III</i> (Hall 106) Chair: Lutz Angermann	<i>Plasmonics I</i> (Main Hall) Chair: Vasily Klimov
11.00	B. Plamenevskii, A. Poretckii: The Maxwell system in domains with cylindrical ends	Y. Chung, V.V. Lebedev, S.S. Vergeles: Interaction of solitons through radiation in optical fibers with randomly varying birefringence	Krasavin A.V., Zayats A.V., Fedyanin D. Yu., Arsenin A.V. Active plasmonics: manipulation of light at the nanoscale
11.20	Suslina T.A.: Operator error estimates for homogenization of the elliptic Dirichlet problem in a bounded domain	Glushkov E.V., Glushkova N.V., Zhang Ch.: High-velocity surface wave excitation in diamond-based piezoelectric laminate composite structures	A.P. Vinogradov, D.G. Baranov, A.A. Lisyansky: Plasmonic and quantum plasmonic enhancement of magneto-optics
11.30			
11.40	Lobanov I.S., Popov I.Yu.: Zig-zag – armchair junction of nanotubes: the spectrum of quantum graph model	Öztürk, H., Çınar, G.: Radiation of TEM waves from an aperture in a coaxial waveguide	A. Bogdanov, I. Fedorov, A.N. Lagarkov, G. Tartakovskiy, A.K. Sarychev: Luminescence in the array of plasmonic antennas
11.45			
12.00	Bakharev F.L.: Asymptotics of the spectral bands in periodic waveguides with thin and short ligaments	M.A. Basarab: Balance of the hemisphere resonator gyroscope by the neural network algorithm	D.G. Baranov, A.P. Vinogradov, C.R. Simovski: Coherent plasmonic perfect absorber
12.15			
12.20			

12.45

Lunch at Dom Aktyora restaurant

	<i>Spectral theory methods III</i> (Hall 311) Chair: Sönke Hansen	<i>Elastic waves in complex media</i> (Hall 106) Chair: German Maximov	<i>Nonlinear metamaterials I</i> (Main Hall) Chair: Nikolai Rosanov
14.30		Franco Pastrone, Jüri Engelbrecht: Non linear waves in complex microstructured solids	I.V. Shadrivov, K.E. Hannam, D.A. Powell, Yu.S. Kivshar: Controlling nonlinear properties of metamaterials
14.50	Senik N.N.: Homogenization for second order periodic elliptic differential operators in a strip	Ivanova E.A.: On hyperbolic type theories of thermoelasticity and thermoviscoelasticity	P.V. Kapitanova, D.S. Filonov, P.M. Voroshilov, P.A. Belov, S.I. Maslovskiy, I.V. Shadrivov, Yu.S. Kivshar: Light controllable magnetic metamaterials
15.00			
15.10	Kukushkin A.A.: Homogenization of the two-dimensional periodic Dirac operator	Golub M.V., Zhang Ch.: Transmission and resonances in layered phononic crystals with damages	

15.30	Golovina A.M.: On the resolvent of operators with distant perturbations	Grekova E.F.: Small perturbations of the spherically symmetric prestressed state in a nonlinear isotropic elastic full Cosserat medium: waves and instabilities	I.V. Iorsh, P.A.Belov, A.A. Zharov, I.V. Shadrivov, Yu.S. Kivshar: Nonlinear Tamm states in plasmonic metamaterials
15.45			
15.50	G.P. Miroshnichenko, A.I. Trifanov: Properties of the system differential equations describing operators of quantum system conditional evolution	George V. Filippenko: The forced oscillations of the cylindrical shell partially submerged into the layer of liquid	Zharova N.A., Shadrivov I.V., Zharov A.A., Kivshar Yu.S.: Nonlinear subwavelength invisibility cloak
16.10			

16.15 **Coffee Break**

	<i>Water waves I</i> (Hall 311) Chair: Sergey Dobrokhotov	<i>Metal-dielectric optical metamaterials</i> (Main Hall) Chair: Alexander Zharov
16.40	Kouzov D.P., Zhuchkova M.G.: Propagation of flexural-gravity waves through multiple straight-line irregularities in an elastic plate floating on water	Kotynski R.: Metal-dielectric layered metamaterials for sub-diffraction spatial filtering of the optical wavefront
17.00	Maximov V.V., Babchik D.V., Nudner I.S., Khakimzyanov G.S., Semenov K.K., Titova N.D.: The interaction of periodic waves with sloping structures	
17.10		Stolarek M., Kotynski R.: Asymmetric transmission through a structure consisting of two photonic bandgap materials
17.20	Petrov P.S., Trofimov M.Yu., Zakharenko A.D.: Mode parabolic equations for the modeling of sound propagation in 3D-varying shallow water waveguides	R. Marqués, J.D. Baena, V. Delgado, J.D. Ortiz: Limitations of the Babinet's principle at the nanoscale
17.25		
17.40	Melike Erdogan, Tolga Ulas Gurbuz, Emine Pinar	Saveliev R.S., Rosanov N.N., Fedorov S.V., Belov P.A., Sukhorukov A.A., Kivshar Yu.S.: Gain-induced compensation of losses in metal-dielectric metamaterials
17.55	Karabulut, Ibrahim Akduman: Non-linear underwater imaging with realistic models	
18.00		Woo Ju Kim and Choon-Gi Choi: Fabrication of a flexible Ag-ZnO multilayer fishnet metamaterial
18.10		

18.25

	<i>Localized waves II</i> (Hall 311) Chair: Leonid Kalyakin	<i>Acoustics and vibration</i> (Hall 106) Chair: Franco Pastrone	<i>Wire metamaterials</i> (Main Hall) Chair: Alexander Poddubniy
9.00			S. M. Hashemi, Nefedov I.S.: Absorption in a finite-thickness array of tilted carbon nanotubes in the terahertz range
9.20	A.P. Kiselev, A.B. Plachenov, P. Chamorro-Posada: Further generalizations of the Bateman solution. Novel wave beams and wave packets	Dugarov G.A.: Seismic wave velocity and attenuation anisotropy analysis for media with one system of parallel fractures	Simovski C.R., Nefedov I.S., Maslovski S.I.: Enhanced radiative heat transfer at microscale in the near infrared
9.30			
9.40	Aero E.L., Bulygin A.N., Pavlov Yu.V.: Exact solutions of nonlinear Klein–Gordon equation	E.D. Shabalina, V.Yu. Valyaev, A.V. Shanin: Acoustical experiment in layered media	
10.00	E.G. Abramochkin, E.V. Razueva: On an extremal property of a 2D Gaussian beam under propagation	So V. Nguyen, Alexander V. Osetrov: Surface waves propagation models in semi-infinite systems with gratings	Vorobev V.V., Tyukhtin A.V.: Cherenkov radiation of charged particle bunches in wire metamaterial
10.15			D.E. Fernandes, S.I. Maslovski, M.G. Silveirinha: Enhancement of Cherenkov emission inside a nanowire material
10.20	Kulya M.S., Kislin D.A., Knyazev M.A., Kozlov S.A.: Diffraction of terahertz wave packets of a few oscillations of electrical field	G.A. Maximov: Theory of sound propagation in suspensions on the basis of the generalized variational principle	
10.30			

10.40 **Coffee Break**

	<i>Spectral theory methods IV</i> (Hall 311) Chair: Jari Taskinen	<i>Electromagnetics and plasmons I</i> (Hall 106) Chair: Tatiana Zaboronkova	<i>Nonlinear metamaterials II</i> (Main Hall) Chair: Ilya Shadrivov
11.00	Badanin A.V., Saburova N.Yu., Korotyayev E.L.: Spectrum of the Laplace operator on a periodic graph	A.V. Kudrin, N.M. Shmeleva, T.M. Zaboronkova: Excitation of electromagnetic waves by a pulsed ring electric current in a magnetoplasma containing a cylindrical density duct	A.P. Sukhorukov, A.K. Sukhorukova, T.A. Voitova: Nonlinear-dispersive interactions of optical pulses in metamaterials
11.20	A. Badanin, E. Korotyayev, N. Saburova: The Laplace operator on the periodic graphs: quantum network	R.F. Ndangali, S.V. Shabanov: The resonant nonlinear scattering theory with bound states in the radiation continuum and the second harmonic generation	Noskov R.E., Krasnok A.E., Kivshar Y.S.: Ultrafast light switching and routing by nonlinear metaldielectric nanoantennas
11.30			
11.40	Neverova D.A.: Generalized and classical solutions of boundary value problem for differential-difference equations	Angermann L., Yatsyk V.V., Yatsyk M.V.: Modeling and analysis of resonance scattering and generation of waves on cubically polarisable nonlinear layered structures	Rosanov N.N., Vyssotina N.V., Shatsev A.N., Desyatnikov A.S., Kivshar Yu.S.: Discrete dissipative topological and knotted solitons in bistable magnetic metamaterials
11.45			
12.00	S. Hansen: The surface impedance tensor and Rayleigh waves	Gandel' Yu.V., Dushkin V.D.: The method of parametric representations of integral and pseudo-differential operators in diffraction problems on electrodynamic structures	Maly S.V., Rudnitsky A.S.: Modeling of metamaterials and composites with nonlinear electromagnetic properties
12.15			
12.20			

12.30 **Lunch at Dom Aktyora restaurant**

	<i>Asymptotic Methods I</i> (Hall 311) Chair: Vassily Babich	<i>Plasmonics II</i> (Main Hall) Chair: Alexei Vinogradov
14.30		A. Castanie, B. Guizal, D. Felbacq: Strong coupling between surface plasmon and guided modes
14.50	Il'in A.M., Dolbeeva S.F., Khachay O.Yu.: Multiscale boundary layers	Vorobev P.E., Belan S.A.: The hybrid waveguide
15.00		
15.10	Kulikovskii A.G, Chugainova A.P.: Self-similar asymptotics describing nonlinear waves in elastic media with dispersion and dissipation	Zharov A.A., Zharova N.A., Smirnova D.A., Zharov A.A. (Jr): Surface plasmon scattering by one- and two-
15.15		

15.30	V.G. Danilov: Forward- and backward-in-time solutions to parabolic PDE with a small parameter	dimensional defects of metal/dielectric/metal slot waveguide: 3D nanofocusing of light
15.45		A. Ivanov, A. Shalygin, P. Vorobev, S. Vergiles, A.K. Sarychev: Plasmon excitation in array of almost adjoining metal nanorods: field enhancement and optical sensing
15.50	Kalyakin L.A.: Asymptotic analysis of the autoresonance phenomenon	
16.00		Fateev D.V., Popov V.V., Nikitov S.A: Terahertz plasmonic photogalvanic effects in a planar plasmonic crystal with an asymmetric unit cell
16.10		

16.15 **Coffee break**

	<i>Water waves II</i> (Hall 311) Chair: Nikolay Kuznetsov	<i>Hyperbolic media</i> (Main Hall) Chair: Constantin Simovski
16.40	Mats Ehrnström, Mark Groves, Erik Wahlén: On the existence and stability of solitary-wave solutions to a class of evolution equations of Whitham type	A.S. Potemkin, A.N. Poddubny, P.A. Belov: Green function for hyperbolic medium
16.55		A.V. Chshelokova, P.V. Kapitanova, A.N. Poddubny, P.A. Belov, Yu.S. Kivshar: Hyperbolic metamaterials formed by artificial transmission lines
17.00	N. Kuznetsov: On integral properties of steady gravity waves on water of finite depth	
17.10		A.N. Poddubny, I. Iorsh, A.A. Orlov, P.A. Belov, Yu. Kivshar: Purcell effect in hyperbolic medium
17.20	N.G. Kuznetsov, O.V. Motygin: On trapping of time-harmonic water waves by a system of axisymmetric surface-piercing bodies floating freely	
17.40	G.A. Omel'yanov: Multi-solitons interaction for generalized KdV equations	A. Boardman, V. Grimalsky, Yu. Rapoport: Nonlinear propagation of beams in hyperbolic metamaterials
17.55		

19.00 **Boat tour**

	<i>Asymptotic Methods II</i> (Main Hall) Chair: Arlen Il'in	<i>Photonic crystals</i> (Hall 311) Chair: Ivan Iorsh
9.00	B. Delourme, O.P. Bruno: Rapidly convergent quasi-periodic Green function throughout the spectrum — including Wood anomalies	Yue Sun, Thomas P. White, A.A. Sukhorukov: Slow-light enhanced optomechanical interactions in photonic crystals
9.20	A.I. Esina, A.I. Shafarevich: Spectrum and eigenfunctions of the operator of an induction of a magnetic field on a three-dimensional sol-manifold	I. Munina, V. Turgaliev, I. Vendik, M. Odit: Tunable metamaterials for THz electromagnetic spectrum using piezoelectric cantilevers
9.30		
9.40	D.S. Minenkov: An asymptotic problem for a 2D wave equation with variable velocity and localized right-hand side	Sidorenko M.S., Perel M.V.: An explanation of the directed diffraction phenomenon in photonic crystals
9.45		
10.00	Lozhnikov D.A.: The propagation above the crest of the tsunami waves generated by localized source	I.G. Lebo: Laser implantation of ferroelectric nanoparticles into pores of synthetic opal. The phys.-math. models and comparison with experimental data
10.15		V.G. Fedotov, A.V. Sel'kin: Six- and three-fold axial symmetries in reflection and transmission spectra of opaline photonic crystals
10.20	Dobrokhotov S.Yu.: Beams dynamics and Lagrangian manifolds	J.D. Ortiz, J.D. Baena, R. Marqués, F. Medina: Self-complementary metasurfaces
10.30		
10.40		

10.45 **Coffee break**

	<i>Asymptotic Methods III</i> (Main Hall) Chair: Andrey Kulikovskii	<i>Electromagnetics and plasmons II</i> (Hall 311) Chair: Sergei Shabanov
11.00	Nazaikinskii V.E.: The geometry of rays for a wave equation degenerating on the boundary	E.E. Grishina, Yu.G. Smirnov: Reconstruction of complex permittivity of a nonhomogeneous body in a rectangular waveguide using the iteration method
11.20	S.A. Sergeev, S.Yu. Dobrokhotov, B. Tirozzi: Effective asymptotics for solutions of the Cauchy problem with localized initial data for linear Boussinesque type equation with variable velocity and small dispersion	Ignatyeva D.O., Sukhorukov A.P.: Nonlinear total internal reflection of surface plasmons
11.40	Nekrasov R.V., Rouleux M.: Magnetization in thin films and its semiclassical calculation	Kovalev, M.D.: On eigenvalues of the propagation constant for a planar dielectric waveguide
12.00	Belishev M.I., Pestov A.L.: Characterization of dynamical inverse data for two velocity dynamical system	Can Suer, Mehmet Çayören, İbrahim Akduman, Güray Ali Canlı: Non-destructive testing of composite materials through linear sampling method

12.20 **Lunch at Dom Aktyora restaurant**

	<i>Generalized functions and PDE</i> (Main Hall) Chair: Vladimir Shelkovich	<i>Elastic waves</i> (Hall 311) Chair: Ivan Andronov
14.30	J.F. Colombeau: Acoustic diffusion by an elastic solid. The general Galbrun equations, experimental results and search of a mathematical understanding	Anufrieva A.V., Kipot V.L., Tumakov D.N.: Elastic wave propagation through a layer with graded-index distribution of density
14.50	Shelkovich V.M.: Delta-shocks in one system of conservation laws	Glushkov E.V., Glushkova N.V., Eremin A.A., Lammering R.: Lamb wave interaction with through-thickness obstacles of different nature: scatterer characterization
15.10	M. Colombeau: Existence of irregular solutions for some nonlinear PDEs	Kachalov A.P., Kachalov S.A.: Computation of Rayleigh waves in homogeneous anisotropic half space using impedance operator
15.30	Francisco Villarreal: Heaviside generalized functions and shock waves in nonlinear problems: a survey	Glushkov E.V., Glushkova N.V., Golub M.V., Moll J., Fritzen C.-P.: Elastic wave energy trapping in a plate with a crack: theory and experiment
15.50	Chepilko S.S., Dmitrieva L.A.: Reduction of the Ito functional integral associated with two-dimensional non-constant diffusion process with drift to the Wiener type path integral	Kozlov A.V., Mozhaev V.G.: Anisotropic generalization of the theory of acoustic beams using local ellipsoidal/hyperboloidal approximation for the slowness surface

16.10

Coffee break

	<i>Wavelets</i> Chair: Mikhail Altaisky	(Main Hall)
16.40	M.V. Altaisky, N.E. Kaputkina: On wavelet transform in Minkowski space	
17.00	E.A. Gorodnitskiy, M.V. Perel, Yu Geng, Ru-Shan Wu: Poincaré wavelet technique in the depth migration	
17.20	Hein H., Feklistova L.: Free vibration and buckling of functionally graded Euler–Bernoulli and Timoshenko beams using Haar wavelets	
17.40	Kravchenko V.F., Churikov D.V.: Integrated nonparametric estimations of probability density of stochastic processes by atomic functions	
18.00	Kravchenko V.F., Churikov D.V.: New constructions of digital filters synthesis on base of generalized Kravchenko–Kotelnikov sampling theorem	

8.00 **Departure of the buses from Mathematical Institute (Fontanka 27) to Petrodvorets**

9.00 **Posters**

Plenary talk

Chair: Aleksei Kiselev

9.30 M.M. Popov

Gaussian Beam Summation Method, mathematical foundations and applications for modeling and migration

10.15 **Coffee Break & Posters**

1. Valeriy A. Abdulkadyrov, Dmitriy V. Abdulkadyrov: Diffraction of the electromagnetic wave on a grating located nearby semiconductor layer at the flippy of transmitters from a border.
2. Leonardo A. Ambrosio, Hugo E. Hernandez-Figueroa: Geometrical optics description of radial forces over lossy spherical particles with a negative index of refraction.
3. E.S. Andrianov, A.A. Pukhov, A.V. Dorofeenko, A.P. Vinogradov, and A.A. Lisyansky: Spaser-effect for loss compensation in metamaterials.
4. Babenkov M.B.: Analysis of the plane wave propagation in a thermoelastic half space with regard to a heat flux relaxation constant.
5. V.M. Babich, B.A. Samokish, N.V. Mokeeva: Diffraction a plane wave by a transparent wedge. Numerical approach.
6. Vitalii N. Chukov: The Rayleigh law of scattering violation peculiarities.
7. V. I. Demidchik, R.V. Kornev, P.D. Kuharchik: Electromagnetic wave reflection by bi-isotropic layer.
8. Drozdov A.A., Kozlov S.A., Sukhorukov A.A., Kivshar Yu.S.: Self-action of single-cycle light pulses.
9. Ege N., Erbaş B., Prikazchikov D.A., Sokolov A.P.: An asymptotic model for the Rayleigh wave in elastic half space.
10. Erbaş B., Kaplunov J., Prikazchikov D.A.: An asymptotic model for the Rayleigh surface wave in case of mixed boundary value problems.
11. V.T. Erofeenko, A.K. Sinitsyn: Simulation of symmetric waves passage through biisotropic partition in circular waveguide.
12. Farafonov V.G., Sokolovskaya M.V., Il'in V.B.: Solution to the electrostatic problem for a non-confocal core-mantle spheroid.
13. D.S. Filonov, A.E. Krasnok, A.E. Miroshnichenko, A.P. Slobozhanyuk, P.V. Kapitanova, Yu. S. Kivshar and P.A. Belov: Testing the concept of all-dielectric optical nanoantennas at microwaves.
14. L.A. Glushchenko, F.A. Zapryagaev, V.S. Makin, V.Ya. Krokhalev, F.A. Blyakhman: Human body surface oscillations remote measurements with use of laser Doppler interferometry.
15. Kalyabin D.V., Lisenkov I.V., Nikitov S.A.: The spatial frequency separation of surface acoustic waves in a wedge-shaped structures of acoustic metamaterials.
16. I.A. Karpov, E.D. Shoo, M.R. Trunin: Equipment for visualization of SHF electric field.
17. S. Khekalov: Special functions associated with the Darboux–Dunkl differential-difference operators.
18. Khokhlov N.E., Belotelov V.I., Akimov I.A., Pohl M., Bayer M., Zvezdin A.K.: Active control of surface plasmon polaritons pulse dynamics.
19. Kosulnikov S.Y., Yankovskaya E.A., Maslovski S.I., Belov P.A. , Kivshar Y.S.: Optimal filling factor of nanorod lenses for subwavelength imaging.
20. Krasnov I.P.: The main vectors among those used for description of electromagnetic field.
21. Krasnov I.P.: Concept of sources in electrodynamics and some of its applications.
22. A.G. Kyurkchan, S.A. Manenkov: New version of modified method of discrete sources for solving the problem of wave diffraction on a group of impedance bodies of revolution.
23. Lapshina N.S. Noskov R.E. , Kivshar Y.S.: A nanoradar based on a nonlinear plasmonic nanodimer.
24. V.S. Makin, R.S. Makin: Surface plasmon polariton excitation and interference with femtosecond laser radiation of nontraditional polarization.
25. A.L. Marchenko, T.V. Koval: Interaction between electron beam and cavity eigenfields in virtual cathode systems.
26. Nesvit K.V.: Hypersingular integral equation of wave diffraction problem on pre-Cantor grating and its discrete mathematical models.
27. V. Petrov: Generalized trigonometric transformation.

28. Popov S.I., Gavrilov M.I., Popov I.Yu.: Localized two-particle states in perturbed nanolayers.
29. A.M. Radin: Integral equations of the first kind with a difference kernel on a finite interval and problems of diffraction of waves.
30. A.S. Rudnitsky, S.V. Maly: MultiBEAM interference in the kaleidoscopic structures.
31. A.V. Sadovnikov, A.G. Rozhnev: Gap soliton characteristics in nonlinear planar Bragg grating structure.
32. A.V. Sadovnikov, A.G. Rozhnev, Yu.P. Sharaevsky: Electrodynamical characteristics of 1D magnonic crystal structure.
33. Nadezhda I. Smirnova, Alexander G. Kyurkchan: Solving diffraction problems on compact scatterers by hybrid approach using continued boundary conditions method.
34. Suchkov S.V., Dmitriev S.V., Sukhorukov A.A., Kivshar Yu.S.: Scattering of the linear and nonlinear waves in optical waveguide array on the PT-symmetric defects.
35. Jela Susic: Doubling of variables method for some evolutionary equations with rough coefficients.
36. Ilya Svechnikov: Anisotropic diffraction in acoustic delay lines with mosaic transducers.
37. Azat M. Tagirdzhanov: "Complex source" in 2D real space.
38. V.V. Trubaev: Linear approximation resonance curve for pressed wave excited by input grating coupler.
39. Utkin A.B.: Ultrashort radiation pulses generated by laser wakefield accelerators: A time-domain approach.
40. Valiev F.F.: Electromagnetic field formed by collimated gamma quanta pulse beam.
41. Visotsky S.L., Pavlov E.S., Filimonov Yu.A., Nikitov S.A.: Defect modes in 1D ferrite magnonic crystals.
42. V.V. Vitko, A.A. Nikitin, A.A. Nikitin, A.A. Semenov: Modelling dispersion of spin-electromagnetic waves in multilayered ferrite-ferroelectric structure.
43. N.F. Yashina, T.M. Zaboronkova: The electromagnetic waves guided by the stratified composite media.
44. Biljana Zekovic: Example of n-ary bialgebra.
45. Znak Pavel: Differential equation for geometrical spreading on a ray and second derivatives of eikonal matrix structure.

Plenary talks

Chair: Pavel Belov

11.30 Mário G. Silveirinha
Metamaterials with extreme parameters: diffraction-free propagation of light and electron waves

12.15 Vasily Klimov
Quantum electrodynamics of atoms and molecules in nanoenvironment

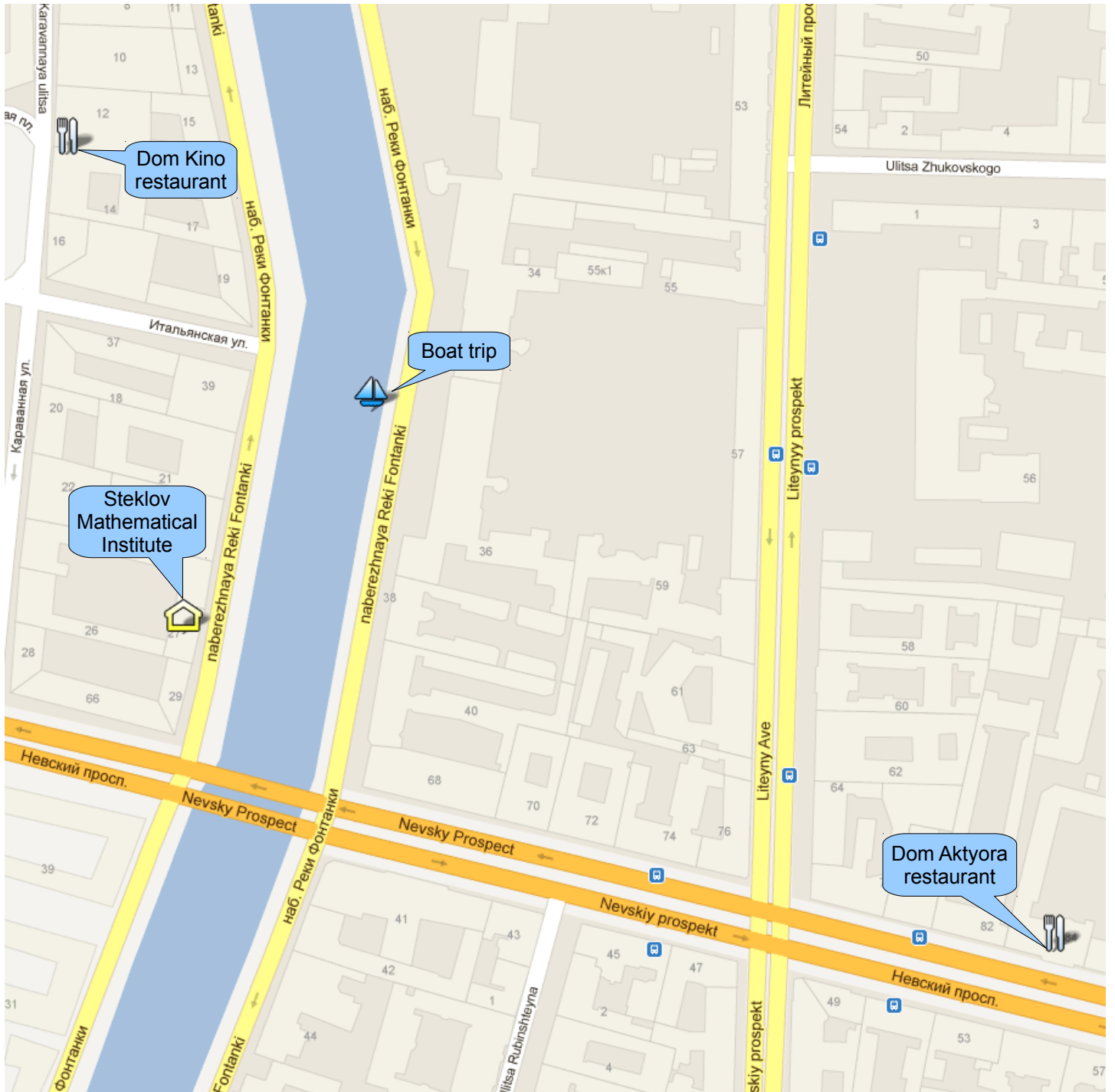
13.00 **Lunch**

14.00 **Excursion**

18.00 **Picnic party at Peterhof forest**

PDMI area map

(see other maps of conference events at <http://www.imi.ras.ru/~dd/index.php>)



Map of the picnic area

