Spin Waves 2015
International Symposium

Program

Ioffe Physical-Technical Institute
Saint Petersburg, Russia
June 7-13, 2015

Monday, June 8 **Oral Sessions Program**

08.30-09:45	**Registration**	
09.45-10.00	**Opening ceremony**	
10.00-11.00	**Session 1**	**Frontiers in spin dynamics**
10.00-10.30	Bert Koopmans (invited)	Ultrafast laser-induced spin-transfer
10.30-11.00	Fulvio Parmigiani (invited)	Free electron lasers: a new frontier for studying the magnetisation dynamics in complex materials
11.00-11.30		**Coffee break**
11.30-13.00	**Session 2**	**Novel probes of magnetism**
11.30-12.00	Sergey Grigoriev (invited)	Measurements of the magnon mass in ferromagnets by small-angle polarized neutron scattering
12.00-12.30	Andrey Rogalev (invited)	Induced magnetisation of 5*d* transition metals studied with XMCD
12.30-12.45	Dmitry Tatarskiy	Nonreciprocal transmission of neutrons through the noncoplanar magnetic system
12.45-13.00	Alexandr Ovsyanikov	Spin waves in multiferroic $NdFe_3(BO_3)_4$ explored by inelastic neutron scattering
13.00-14.30		**Lunch**
14.30-16.15	**Session 3**	**Spin waves on surfaces and in multilayers**
14.30-15.00	Del Atkinson (invited)	Thickness, interfacial and crystal phase contributions to damping and spin-mixing conductance in ferromagnetic/non-magnetic thin-films
15.00-15.15	Yves Roussigné	Non-reciprocity of spin wave propagation induced by the interface Dzyaloshinskii-Moriya interaction in Py/Pt film structures
15.15-15.30	Rhodri Mansell	Controlling magnetic bubbles through the Dzyaloshinskii-Moriya interaction
15.30-15.45	Anton Churbanov	Magnetostatic surface waves in layered structures ferrite-ferromagnetic metal based on epitaxial YIG films and nanostructures TbCo2/FeCo
15:45-16.00	Leonid Lutsev	Spin waves in nanosized YIG films sputtered on semiconductor substrates
16.00-16.15	Yuri Barabanenkov	Green function and T-scattering operator for spin wave propagation along the chain of magnetic inclusions in ferromagnetic film
16.15-16.45		**Coffee-break**
16.45-18.45	**Session 4**	**Excitations in quantum and frustrated magnets**
16.45-17.15	Sergei Zvyagin (invited)	Spin dynamics in the triangular-lattice antiferromagnet Cs_2CuBr_4
17.15-17.30	Kirill Povarov	Spectrum of a bond-disordered S=1 quantum spin liquid
17.30-17.45	Leonid Svistov	Magnetic structure and domain conversion of frustrated antiferromagnet on a triangular lattice $CuCrO_2$ probed by NMR and ESR
17.45-18.00	Sergey Sosin	Spin dynamics and “order by disorder” effect in XY pyrochlore antiferromagnet
18.00-18.15	Timofey Soldatov	Magnetic resonance of spinons in S=1/2 chain antiferromagnet with uniform Dzyaloshinsky-Moriya interaction $K_2CuSO_4Br_2$
18.15-18.30	Oleg Utesov	Low temperature properties of chiral magnets with defects
18.30-18.45	Alexander Moskvin	Computer modeling the phase states and phase transitions in 2D S=1 (pseudo)spin systems
18.45-21.00		**Welcome party**

Tuesday, June 9 **Oral Sessions Program**

09.00-10.45	**Session 5**	**Magnonics**
09.00-09.30	Volodymyr Kruglyak (invited)	Towards graded-index magnonics: Steering spin waves in networks of magnonic waveguides
09.30-10.00	Sebastiaan van Dijken (invited)	Voltage control of spin waves in ferroelectric-ferromagnetic heterostructures
10.00-10.15	Sergey Nikitov	Dynamically reconfigurable magnonic circuits based on domain walls in arrays of dipolary coupled magnetic nanodots
10.15-10.30	Naoki Kanazawa	Spin wave logic operation in three-ports yttrium iron garnet waveguide
10:30-10:45	Dmitry Kalyabin	Magnetostatic spin waves in irregular narrow ferromagnetic waveguides
10.45-11.15		**Coffee break**
11.15-12.45	**Session 6**	**Spin-torque effects**
11.15-11.45	Daniel Bürgler (invited)	Fine-split gyration frequencies in nano-oscillators with two stacked vortices
11.45-12.15	Romain Lebrun (invited)	Origin and control of phase noise of spin transfer nano-oscillators: from mode coupling to mutual electrical synchronization
12.15-12.30	Evgeny Karashtin	Instability of a domain wall in electric current due to topological charge
12.30-12.45	Alexander Mitrofanov	Amplitude and phase noise of the synchronized spin torque nanooscillator
13.00-14.30		**Lunch**
14.30-17.30	**Session 7**	**Spin-related phenomena in multiferroic oxides**
14.30-15.00	Sandor Bordács (invited)	Dynamic magnetoelectric effects in multiferroic oxides
15.00-15.15	Andrei Sirenko	Mueller matrix spectroscopic ellipsometry of magnons and magneto-electric modes in multiferroics using synchrotron radiation
15.15-15.30	Alexander Mukhin	Magnetoelectric resonance phenomena with electromagnons in the rare-earth ferroborates
15.30-15.45	Anatolii Pankrats	Magnetic resonance and dielectric properties of $PbMnBO_4$ single crystal
15.15-16.15		**Coffee break**
16.15-16.30	Mikhail Prosnikov	Spin excitations in an antiferromagnetic nickel orthoborate $Ni_3(BO_3)_2$
16.30-16.45	Kirill Boldyrev	New phase transitions, magnetic structures and excitations in multiferroic CuB_2O_4 revealed by optical spectroscopy
16.45-17.00	Dennis Kudlacik	Monitoring of magnetic phase transitions by time-resolved photoluminescence in an antiferromagnet CuB_2O_4
17.00-19.00		**Poster session and refreshments**

Wednesday, June 10 **Oral Session Program**

09.30-10.45	**Session 8**	**Ultrafast control of magnetization**
09.45-10.00	Marco Battiato	Microscopic configuration after ultrafast magnetisation dynamics and ultrafast spectroscopy
09.30-09.45	Sergei Ovchinnikov	Theory of the exchange interaction under optical pumping
10.00-10.15	Alexey Salasyuk	Magnetization precession driven by resonant monochromatic acoustic phonons
10.15-10.30	Manuel Jäckl	Optically induced ferromagnetic resonance in magnetic iron garnets by a sequence of optical pulses
10.30-10.45	Mikhail Kozhaev	Influence of the fs-optical pump power on spin dynamics in rare earth iron garnets
10.45-11.15	**Coffee break**	
11.15-13.00	**Open Lecture by the IEEE distinguished Lecturer 2015**	
11.15-13.00	Russell Cowburn (invited)	Perpendicular magnetic anisotropy: from ultralow power spintronics to cancer therapy
13.00-14.30	**Lunch**	

15.00-18.30	**Excursion to the Russian Museum**

The Russian Museum is the first state museum of Russian fine arts in the country. It was established in 1895 in St Petersburg by a decree of the Emperor Nicholas II. The Russian Museum today is a unique depository of artistic treasures, a leading restoration center and an authoritative institute of academic research. The Russian Museum collection contains more than 400.000 exhibits. The main complex of museum buildings - the Mikhailovsky Palace and Benois Wing are houses for the permanent exhibition of the Russian Museum.

18.30-21.30	**Symposium dinner**

Thursday, June 11 **Oral Session Program**

09.00-10.30	**Session 9**	**BEC and nonlinear spin-wave phenomena**
09.00-09.15	Yury Bunkov	Thermal versus dynamic frequency shift in $CsMnF_3$ and $MnCO_3$
09.15-09.30	Victor L'vov	Energy and magnon fluxes toward BEC in antiferromagnets
09.30-09.45	Andrei Slavin	Coherent excitation of a "magnonic sound"
09.45-10.00	Anton Glushchenko	Classification of magnetic equilibrium states of Bose systems with the spin s=1
10.00-10.15	Albrecht Jander	Acoustic parametric pumping of spin waves in yttrium iron garnet films
10.15-10.30	Alexander Andrienko	"Resonator-sample" nonlinear coupling as a key mechanism of the spin wave parallel pumping restriction
10.30-10.35		**Introduction to IEEE Magnetics (Andrei Slavin)**
10.35-11.00		**Coffee-break**
11.00-13.00	**Session 10**	**Skyrmions, domain walls and vortices**
11.00-11.30	Peter Lemmens (invited)	Non reciprocal effects in phonon scattering of the skyrmion lattice system Cu_2OSeO_3
11.30-12.00	István Kézsmárki (invited)	Néel-type skyrmion lattice in the polar magnetic semiconductor
12.00-12.15	Maksim Sapozhnikov	Two-dimensional skyrmion lattices in a nanopatterned magnetic film
12.15-12.30	Hermann Stoll	Hybridization of higher order gyromodes (flexure modes) with azimuthal spin waves in vortex structures
12.30-12.45	Tatiana Shapaeva	Domain wall fine structure dynamics in garnet films and yttrium orthoferrite plates
12.45-13.00	Mikhail Logunov	The initial phase of field-driven domain wall motion: transition from linear to nonlinear motion mode
13.00-14.30		**Lunch**
14.30-16.00	**Session 11**	**Advances in spin-based devices and technology**
14.30-15.00	Yury Khivintsev (invited)	Spin waves in yttrium iron garnet structures with incorporated microantennas for advanced microwave applications
15.00-15.15	Alexey Ustinov	Self-generation of spin-electromagnetic wave solitons and chaos
15.15-15.30	Galina Kurlyandskaya	From FeNi nanoparticles obtained by the electric explosion of wire to FeNi/polymer functional composites
15.30-15.45	Taichi Goto	Spin wave differential circuit for realization of thermally stable magnonic sensors
15.45-16.00	Yury Filimonov	Spin waves interference in matrix of orthogonal ferrite waveguides for magnonic computing
16.00-16.30		**Coffee break**
16.30-17.45	**Session 12**	**Magneto-optical spectroscopy of spin excitations**
16.30-17.00	Mikhail Glazov (invited)	Spin noise spectroscopy of semiconductor nanosystems
17.00-17.15	Andrei Stashkevich	Negative refraction magneto-optical metamaterial based on ultra-thin Co nanowires
17.15-17.30	Tatiana Murzina	Nonlinear-optical effects in a 1D Au/BIG magnetoplasmonic crystals
17.30-17.45	Elena Gan'shina	Magneto-optical spectroscopy of InMaAs on InAs prepared by ion implantation and pulsed laser annealing
17.45-18.00		**Closing remarks**

Tuesday, June 9
17.00-19.00

Poster Session Program

Section 1		Ultrafast magnetization dynamcis
1-1	V.N. Gridnev	Theory of all-optical magnetization switching in ferrimagnets
1-2	V.N. Kats	Optical excitation of magnetization precession in low-symmetry Galfenol film: heat vs. strain
1-3	M.I. Kurkin	Orbital model of spin switching after exposure to femtosecond laser pulses
1-4	L.A. Shelukhin	Laser-induced magnetic anisotropy dynamics in low symmetry garnet films
1-5	V.V. Zverev	Dynamic structural transformations in moving vortex-type domain walls (3D micromagnetic simulations)

Section 2		Excitations in quantum and frustrated magnets
2-1	E. Akimova	Electron spin resonance in a weakly ordered S=1/2 chain antiferromagnet Sr_2CuO_3
2-2	A. Akterskiy	Low-energy dynamics of spin-1/2 square J_1-J_2 Heisenberg antiferromagnet
2-3	L. Batalov	Order-by-disorder effects in antiferromagnets on face-centred cubic lattice
2-4	Y. Bunkov	Majorana fermions: direct measurements in superfluid 3He
2-5	Yu. A. Fridman	Spin nematic states for isotropic magnet with spin S=2
2-6	A.N. Ignatenko	Thermodynamic behaviour of cubic lattice collinear antiferromagnets with vanishing spin wave velocity
2-7	V.Yu. Irkhin	Spiral magnetism and phase separation in the Hubbard and Anderson lattice models
2-8	S.A. Klimin	Crystal field excitations in pyrochlore $Tb_2Ti_2O_7$
2-9	O.A. Kosmachev	Influence of anisotropic exchange interaction on the phase states of non-Heisenberg spin-1 magnetic
2-10	D. Nazipov	Exchange interaction in $Lu_2V_2O_7$, $Y_2V_2O_7$: ab initio approach
2-11	A. Pankrats	The multilayered structures based on the $CuCrS_2$ single crystals
2-12	Yu. Panov	Competition of spin and charge orders in a model cuprate
2-13	A. I. Smirnov	Repulsion of magnons in a saturated antiferromagnet revealed by magnetic resonance in Cs_2CuCl_4
2-14	A.O. Sorokin	Magnon spectrum in two-dimensional ferromagnets with a skyrmion
2-15	A.Zlotnikov	Spin wave theory of heavy-fermion antiferromagnets in the framework of the periodic Anderson model

Tuesday, June 9
17.00-19.00

Poster Session Program

Section 3		Spin waves on surfaces and in multilayers
3-1	A. Bazhanov	Temperature dependence of the spin-wave resonances mode line widths in three-layer magnetic films
3-2	S. Bezborodov	The influence of the damping parameter in the pinning layer and microwave field frequency on the dispersion curves of the spin-wave resonance spectra
3-3	E. Ekomasov	Autoresonance parametric excitation of magnetic breather in three-layered ferromagnetic structure with various parameters of magnetic anisotropy and exchange
3-4	N. Grigoryeva	Some peculiarities of spin-wave propagation in dipole-coupled ferromagnetic layers with different types of magnetocrystalline anisotropy
3-5	V. Kononenko	The transport characteristics of a superconductor-magnet composite
3-6	A. Korovin	Spin-wave propagation and magnetic properties of laser-MBE grown nanosized $Y_3Fe_5O_{12}$ films
3-7	L. Lutsev	Spin-wave filters based on sputtered nanosized YIG films
3-8	V. Nikiforov	Size-dependent magnetic properties of magnetite nanoparticles
3-9	S. Osokin	Spin wave bound modes in a circular array of magnetic inclusions embedded into ferromagnetic matrix
3-10	A. Sadovnikov	Discrete diffraction in planar magnetic waveguide array
3-11	V. Sakharov	MSSW in submicron YIG films deposited by oxygen ion beam evaporation on gadolinium gallium garnet and silicon substrates
3-12	E.V. Skorohodov	Ferromagnetic resonance in magnetostatically coupled microstripes
3-13	N. Yantsen	Spin-wave resonance in ferrite-garnet films with orthorhombic anisotropy

Section 4		Nonlinear spin-wave phenomena and relaxation processes
4-1	M. Cherkasskii	Bright and dark envelope solitons in ferrite-ferroelectric layered structures
4-2	S. Grishin	Generation of chaotic parametric solitons in L-corner magnonic waveguide
4-3	A.V. Ivanov	Numerical simulation of magnetics based on physical kinetics
4-4	A.P. Ivanov	Application of model of the connected oscillators for the analysis of nonlinear excitement of the hypersound at a ferromagnetic resonance
4-5	A.F. Kabychenkov	Dynamic magnetic state in diamagnetic
4-6	A. Kondrashov	Directional synchronization of two active feedback rings in monochromatic and periodic regimes
4-7	R.V. Kudryavtsev	One-dimensional resonant dynamics of the domain walls in multilayer ferromagnetic structure
4-8	E.S. Pavlov	Bistability in a nonlinear MSSW bragg defect mode resonators
4-9	D. Pleshev	Modeling of rf nonlinear dynamics of magnetoelastic oscillations in a ferrite layer
4-10	M. S. Shustin	Spin wave theory of the two sublattice anisotropic single-chain magnet $\{[Fe^{III}(Tp^*)(CN)_3]_2Fe^{II}(bpmh)\}\cdot 2H_2O$
4-11	A. B. Ustinov	Investigation of the chaotic dynamics of spin wave envelope solitons in magnetic films

Tuesday, June 9
17.00-19.00

Poster Session Program

Section 5		Spintronics and magnetism at the nanoscale
5-1	S.V. Aksenov	Andreev bound states and the Josephson current through a spin dimeric structure
5-2	A.V. Azovtsev	Micromagnetic simulations of the magnetization dynamics induced in ferromagnetic films by standing elastic waves
5-3	S. Gastev	Magnetization reversal in YIG (111) epitaxial nanofilms
5-4	I. Goryachev	Numerical simulation of AF/FM heterostructure at atomistic scale
5-5	Iu. Iusipova	Hierarchy of models for cobalt cell of magnetic MRAM memory
5-6	A. Kamantsev	Anomalies of self-radiation of electromagnetic waves near magnetic and structural phase transitions in functional alloys
5-7	N. Ostrovskaya	Bifurcation theory of the dynamical system for three-layered nanopillar
5-8	E. Shalygina	The influence of Bi on magnetic and magneto-optical properties of Co/Bi/Co low-dimensional thin-film systems
5-9	A. Svalov	Magnetic properties and ferromagnetic resonance in GdCo-based multilayers
5-10	N. Useinov	Tunnel magnetoresistance and spin transfer torque in magnetic tunnel junctions with embedded nanoparticles
5-11	L. Uspenskaya	Ultrafast motion of domain wall in permalloy microstripes under spin-polarized current pulses
5-12	R. Vakhitov	Structure and properties of magnetic inhomogeneities forming on defects of the magnet
5-13	E.D. Vinokhodov	Voltage-driven magnetization oscillations in magnetic tunnel junctions with electric-field-dependent interfacial anisotropy
5-14	D. Voronin	Spectral power density of thermal fluctuations of magnetization in nanocomposite coatings with magnetite nanoparticles
5-15	A.K. Zybin	Magneto-optical Kerr effect of nanosized ferromagnetic metal-dielectric multilayers $[Co/TiO_2]_n$ on Si: experiment and modelling

Section 6		Magnonics
6-1	E. Beginin	Short spin wave generation in high-contrast magnonic crystal
6-2	S. V. Gerus	Nonreciprocal magnon crystal
6-3	S. Hämäläinen	Spin-wave confinement in $CoFeB/BaTiO_3$ heterostructures
6-4	M.A. Morozova	Band gaps control in one-dimensional magnonic crystal with line-defect
6-5	F. Mushenok	Spin wave excitation by a resonant microwave-to-spin-wave transducer
6-6	A.A. Nikitin	Spin-wave logic gate based on dynamic magnonic crystal
6-7	D. Romanenko	Spin waves propagation in Γ-shaped YIG waveguide
6-8	S. Sheshukova	Modes interaction in high-contrast magnonic crystal
6-9	M. Trukhanova	Separated spin-up and spin-down quantum hydrodynamics and spin current evolution
6-10	V. Vitko	Tunable ferrite-ferroelectric magnonic crystal
6-11	S. Vysotsky	Magnetostatic surface wave propagation in ferrite magnonic crystal consisting of two 1D periodic surface structures

Tuesday, June 9
17.00-19.00

Poster Session Program

Section 7		THz, optical, X-ray, neutron and other probes of magnetism
7-1	V. Grebennikov	Resonant photoemission and magnetic dichroism studies Heusler alloys
7-2	A. Fraerman	Second harmonic generation by a non-collinearly magnetized medium
7-3	T.V. Kuznetsova	Short- and long-living excited states in resonant XPS spectra of d-f element compounds
7-4	M. Logunov	Temporal evolution of laser pulse induced regular domain structure dynamics
7-5	A.V. Malakhovskii	Magneto-optical properties of $ErFe_3(BO_3)_4$ and $ErAl_3(BO_3)_4$ single crystals
7-6	T. Murzina	Optical and nonlinear-optical spectroscopy of 2D regular planar arrays of Au particles in a magnetic dielectric slab
7-7	V. Skidanov	Kerr effect transformation in two-layered transition metals F/N structures
7-8	D. O. Tolmachev	Giant effect of magnetic field on the afterglow of Ce doped gadolinium based garnet scintillators

Section 8		Spin-related phenomena in multiferroics
8-1	K. Bublikov	Effects of non-reciprocity in multiferroic of finite width
8-2	A. Knizhnik G. Demin	The specifics of spin transfer through a multiferroic tunnel barrier with spin-dependent screening at the interfaces
8-3	Z. Gareeva	Electric polarization in bi-layered ferromagnetic film with combined anisotropy
8-4	M. A. Kaschenko	Spectroscopic study of CF excitations in multiferroic $TbMnO_3$ and o-$DyMnO_3$
8-5	A. M. Kuzmenko	Teraherz spectroscopy of crystal-field transitions in locally distorted rare-earth ions in $TmAl_3(BO_3)_4$ magnetoelectrics
8-6	A. I. Morosov	Magnetic structure of multiferroic $BiFeO_3$ – ferromagnet $Co_{0.9}Fe_{0.1}$ interface
8-7	N. Polzikova	Bulk-acoustic-wave-driven magnetic excitations in magnetoelectric resonator
8-8	V. Timofeev	Phase diagram of multiferroic MnI_2