

International workshop
«Dzyaloshinskii-Moriya Interaction and Exotic Spin Structures»
DMI 2015

- Session 1.** Crystal handedness and spin chirality.
Session 2. Critical spin fluctuations at the phase transition in helimagnets.
Session 3. Monoaxial chiral helimagnets
Session 4. Chiral couplings and phase transitions in helimagnets
Session 5. Exotic spin structures (skyrmions, merons, etc.)
Session 6. Spin excitations in helimagnets with DM interaction
Session 7. Theory of DMI effect on the magnetic structure
Session 8. Hall effect in chiral magnetic structures
Session 9. Thin films and surface effects in cubic ferromagnets without center of symmetry
Session 10. Antiferromagnets and multiferroics
Session 11. Neutron scattering for non-collinear magnetism

Tuesday. 26 May 2015

8.00 – 13.30

*Transfer from St-Petersburg to Pskov,
Check in at the hotel,
Registration,
Lunch*

13.50 - 14.00 ***Opening ceremony***

Session 1. Crystal handedness and spin chirality.
Chairman **Prof. Dr. Vladimir Dmitrienko**

14.00 – 14.30 **Igor Zobkalo** (Petersburg Nuclear Physics Institute Gatchina, Russia) «Chirality of spin systems and polarized neutrons»

14.30 – 15.00 **Sven-Arne Siegfried** (Helmholtz-Zentrum Geesthacht, Germany) «Flip of the chiral link between structure and magnetism in transition metal monosilicides and germanides »

15.00 – 15.30 **Takashi Koretsune** (CEMS, RIKEN, Japan) «Sign control of DM interaction in $Mn_{1-x}Fe_xGe$: A first-principles study»

15.30 – 15.50 **Oleg Utesov** (Petersburg Nuclear Physics Institute, Gatchina, Russia) «Low temperature properties of spiral magnets with defects»

15.50 – 16.10 **Alexander Sukhanov** (Petersburg Nuclear Physics Institute Gatchina, Russia) «From spiral to ferromagnetic structure in B20 compounds: role

of cubic anisotropy»

16.10 -16.40 *Coffee break*

Session 2. Critical spin fluctuations at the phase transition in helimagnets.
Chairman **Prof. Dr. Sergey V. Grigoriev**

16.40 – 17.10 **Isabelle Mirebeau** (LLB, Sacly, France) «Two-step pressure induced collapse of magnetic order and fluctuating chiral phase in MnGe Chiral magnet»

17.10 – 17.30 **Gleb Valkovskiy** (Saint-Petersburg State University, St-Petersburg, Russia) «Thermal expansion in the magnetic phase transition region of $Mn_{1-x}Co_xGe$ »

17.30 – 17.50 **Evgeny Altynbayev** (Saint-Petersburg State University, St-Petersburg, Russia) «Quantum fluctuations in Fe-doped MnGe compounds»

17.50 – 18.20 **Sergey Demishev** (Prokhorov General Physics Institute of RAS, Moscow, Russia) «How to see the invisible: hidden quantum critical point in $Mn_{1-x}Fe_xSi$ »

18.20 – 18.40 **Nadya Chubova** (Petersburg Nuclear Physics Institute, Gatchina, Russia) «Quantum and thermal spin fluctuations in $Mn_{1-x}Fe_xSi$: neutron small-angle scattering data»

19.00 *Welcome party*

Wednesday. 27 May 2015

Session 3. Monoaxial chiral helimagnets-I.
Chairman **Prof. Dr. Katsuya Inoue**

9.00 – 9.30 **Jun-ichiro Kishine** (The Open University of Japan, Japan) «Spintronic applications of mono-axial chiral helimagnet»

9.30 – 10.00 **Yoshihiko Togawa**, (Osaka Prefecture University, Japan) «Chiral Soliton Lattice in monoaxial $CrNb_3S_6$ single crystal»

10.00– 10.30 **Shigeo Ohara** (Nagoya Institute of Technology, Japan) «Effect of Partial Substitution of Cu for Ni on the Chiral Magnetic Properties of Rare-earth Intermetallic Compound $YbNi_3Al_9$ »

10.30 – 10.50 **Yusuke Kousaka** (Hiroshima University, Japan) «Chiral Magnetic

Soliton Lattice in MnSi»

10.50 – 11.10 *Coffee break*

Session 4. Chiral couplings and phase transitions in helimagnets.
Chairman **Prof. Dr. Jun-ichiro Kishine**

11.10 – 11.40 **Alexander S. Ovchinnikov** (Ural Federal University Ekaterinburg, Russia) «RG analysis of phase transitions in a layered mono-axis chiral helimagnet»

11.40 – 12.00 **Igor Proskurin** (The Open University of Japan, Chiba, Japan) «Kosterlitz–Thouless Transition and Duality Mapping in a Chiral Helimagnet»

12.00 – 12.20 **Misako Shinozaki** (University of Tokyo, Japan) «Monte Carlo and Mean-Field Studies for Three-Dimensional Chiral Helimagnets»

12.20 – 12.40 **Hiroyasu Matsuura** (The University of Tokyo, Tokyo, Japan) «Theory of Dzyaloshinsky-Moriya interaction derived from screw structure of crystal»

12.40 – 13.00 **Victor Laliena**, (Instituto de Ciencia de Materiales de Aragón – Universidad de Zaragoza, Zaragoza, Spain) «Magnetic field driven incommensurate-commensurate transitions in chiral helimagnets»

13.00 – 14.00 *Lunch*

Session 3. Monoaxial chiral helimagnets-II.
Chairman **Prof. Dr. Yoshihiko Togawa**

14.00 – 14.30 **Roman Morgunov** (Institute of Problems of Chemical Physics, Chernogolovka, Russia) «Series of sudden demagnetizing jumps in $[\text{Mn}((\text{R/S})\text{-pn})_2\text{Mn}((\text{R/S})\text{-pn})_2(\text{H}_2\text{O})][\text{Cr}(\text{CN})_6]_2$ chiral magnet»

14.30 – 14.50 **Kazuki Ohishi** (Comprehensive Research Organization for Science and Society (CROSS) Tokai, Japan) «Chiral Helimagnetism in the Right- and the Left-Handed Single Crystalline Samples of CsCuCl_3 »

14.50 – 15.10 **Katsuya Inoue** (Center for Chiral Science, Hiroshima Univ., Higashihiroshima, Hiroshima, Japan) «State-of-the-Art and Future of Chiral Material Science»

15.10 – 15.40 *Coffee break*

Session 5. Exotic spin structures (skyrmions)

Chairman **Prof. Dr. Markus Garst**

15.40 – 16.10 **Stas Chadov** (Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany) «Dzyaloshinskii-Moriya interaction and magnetocrystalline anisotropy in Heusler materials»

16.10 – 16.30 **Olga Meshcheriakova** (Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany) «Large Noncollinearity and Spin Reorientation in the Novel Mn₂RhSn Heusler Magnet»

16.30 – 16.50 **Yuichi Yamasaki** (CEMS, RIKEN, Japan) «Observation of skyrmion formation in FeGe under applied magnetic field by means of resonant small angle x-ray scattering»

16.50 – 17.10 **Sergey Grigoriev** (Petersburg Nuclear Physics Institute, Gatchina, Russia) «Conical lattice versus skyrmion lattice in MnSi: competition of two structures above T_C »

17.30 *Cultural evening in Pskov*

Thursday 28 May 2015

Session 6. Spin excitations in helimagnets with DM interaction

Chairman **Prof. Dr. Alexander S. Ovchinnikov**

9.00 – 9.30 **Markus Garst** (Institut fur Theoretische Physik, Koln, Germany) «Magnon-skyrmion scattering in chiral magnets»

9.30 – 10.00 **Johannes Waizner** (Institut fur Theoretische Physik, Koln, Germany) «Chiral magnetic resonances and spin-wave excitations of helices and skyrmion crystals»

10.00 – 10.30 **Max Kugler** (TUM FRM-II, Garching, München, Germany) «Band structure of helimagnons in MnSi resolved by inelastic neutron scattering»

10.30 – 11.00 **Dmitry Aristov** (Petersburg Nuclear Physics Institute, Gatchina, Russia) «Semiclassical approach to 2D ferromagnets with skyrmions»

11.00 – 12.00 *Coffee break, Poster session*

Ekaterina Iashina (Saint-Petersburg State University, St-Petersburg, Russia) «Magnetic structure of Mn_{1/3}NbS₂ compound»

A.V. Tsypilnikov (Saint-Petersburg State University, St-Petersburg, Russia)
«Magnon spectrum in ferromagnets with a skyrmion lattice»

Polina Matveyeva (Saint-Petersburg State University, St-Petersburg, Russia)
«Stability of a skyrmion and interaction of magnons»

Tatiana Ischenko (A.M. Prokhorov General Physics Institute Moscow, Russia)
«Spin polaron in the paramagnetic phase of manganese monosilicide»

Anatoly Tsvyashchenko (Vereshchagin Institute for High Pressure Physics, RAS, Moscow, Troitsk, Russia) «Hyperfine field assessment of the magnetic structure of ZrZn_2 »

Sven-Arne Siegfried (Helmholtz-Zentrum Geesthacht, Germany) «Magnetic phase diagram of transition metal monogermanides $\text{Mn}_{1-x}\text{Fe}_x\text{Ge}$ at $x = 0.5 - 0.7$ »

Ranjana Rani Das (Indian Institute of Technology, Madras, India) «Griffith phase observed in double perovskite $\text{Nd}_2\text{CoMnO}_6$ »

Ekaterina Kunitsyna (IPCP RAS, Chernogolovka, Russia) «Bifurcation of magnetic anisotropy caused by small addition of Sm to $(\text{Nd}_{1-x}\text{Sm}_x\text{Dy})(\text{FeCo})\text{B}$ magnetic alloy»

Vlad Tarnavich (Petersburg Nuclear Physics Institute Gatchina, Russia) «Study of field induced chirality in helix structure Ho/Y multilayers»

Session 7. Theory of DMI effect on the magnetic structure – I
Chairman **Dr. Stas Chado**

12.00 – 12.30 **Sergey Maleyev** (Petersburg Nuclear Physics Institute, Gatchina, Russia) «Dzyaloshinskii-Moriya interaction in helimagnets»

12.30 – 13.00 **Liviu Hozoi** (IFW Dresden, Dresden, Germany) «Spin-orbit-driven exotic magnetism in 5d oxides »

13.00 – 14.00 **Lunch**

Session 8. Theory of DMI effect on the magnetic structure-II
Chairman **Dr. Stas Chado**

14.00 - 14.30 **Alexander A. Tsirlin** (National Institute of Chemical Physics and Biophysics, Tallinn, Estonia) «*Ab initio* insight into Dzyaloshinsky-Moriya interactions and magnetic anisotropy in cuprates»

14.30 – 14.50 **Attila Szilva** (Uppsala University, Uppsala, Sweden) «Non-collinear Interatomic Magnetic Exchange and Dzyaloshinskii-Moriya interaction»

Session 8. Hall effect in chiral magnetic structures
Chairman **Prof. Dr. Sergey V. Demishev**

15.00 – 15.30 **Vladimir V. Glushkov** (A.M. Prokhorov General Physics Institute Moscow, Russia) «[Crossover between intrinsic and extrinsic anomalous Hall effect in MnSi](#)»

15.30 – 15.50 **Inna Lobanova** (Prokhorov General Physics Institute of RAS, Moscow, Russia) «[Hall effect in the paramagnetic phase of \$Mn_{1-x}Fe_xSi\$ \(\$x < 0.3\$ \)](#)»

15.50 – 16.20 *Coffee break*

Session 9. Thin films and surface effects in cubic ferromagnets without center of symmetry
Chairman **Prof. Sergey V. Demishev**

16.20 – 16.50 **Dirk Menzel** (Institut fuer Physik der Kondensierten Materie, Technische Universitaet Braunschweig) «[Thin Film Preparation and Characterization of B20 Chiral Magnets](#)»

16.50 – 17.10 **Robert Streubel** (Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany) «[Surface magnetic order and static defect structure in FeGe](#)»

17.10 – 17.30 **Charles Spencer** (University of Leeds, Leeds, United Kingdom) «[Helical magnetic structure in \$Fe_{1-x}Co_xGe\$ epilayers](#)»

17.30 *Cultural evening in Pskov.*

Friday 29 May 2015

Session 10. Antiferromagnets and multiferroics
Chairman **Prof. Dr. Isabelle Mirebeau**

9.00 – 9.30 **Vladimir Dmitrienko** (A.V.Shubnikov Institute of Crystallography RAS, Moscow, Russia) «[Sign of the Dzyaloshinskii–Moriya interaction in canted antiferromagnets: theory and measurements for 3d transition-metal carbonates](#) »

9.30 – 10.00 **Andrei Rogalev** (ESRF, Grenoble, France) «[Determination of the sign of Dzyaloshinskii-Moriya vector in crystals](#)»

10.00 – 10.30 **Kazuhsia Kakurai** (Japan Atomic Energy Agency, Tokai, Japan) «[Polarized Neutron Investigation on Multiferroic Hexaferrite \$Ba_2Mg_2Fe_{12}O_{22}\$](#) »

10.30 – 10.50 **Manuel Pereiro** (Uppsala University, Uppsala, Sweden)

«Skyrmionic excitations in a kagome magnet»

10.50 – 11.05 **Masha Kuchugura** (Saint-Petersburg State University, St-Petersburg, Russia) «Investigation of chirality in TbMn₂O₅ by spherical neutron polarimetry»

11.05 – 11.30 *Coffee break*

Session 11. Neutron scattering for non-collinear magnetism
Chairman **Prof. Dr. Kazuhisa Kakurai**

11.30 – 12.00 **K. Pappas** (TUDelft, Delft, Netherlands) «Chiral Magnetism and Polarized Neutron Scattering»

12.00 – 12.20 **P. Kizhe** (Grad-Kitezh University, Russia) «Spin waves in helimagnets studied by small angle polarized neutron scattering»

12.00 – 12.20 **Konstantin Metlov** (Donetsk Institute for Physics and Technology, Donetsk) «Micromagnetic theory of a third-order effect in magnetic small-angle neutron scattering by a spatially inhomogeneous medium»

12.40 – 13.00 **Alexey Bykov** (Saint Petersburg State University, St-Petersburg, Russia) «Quasi two-dimensional character of the magnetic transition in YMn₆Sn₆»

13.00 – 14.30 *Lunch*

15.00 – 19.00 **Excursion through the old Russian town Pskov**
19.00 – 22.00 **Closure of conference and Conference dinner**

Saturday 30 May 2015

9.00 *Buses to Saint-Petersburg and Gatchina*