

National Academy of Sciences of Ukraine
Bogolyubov Institute for Theoretical Physics
Young Scientists Council

VIII Young Scientists Conference
Problems of Theoretical Physics

December 12-14, 2017
Kyiv, Ukraine

Program

Kyiv 2017

Tuesday, December 12

8-30 Registration begins

9-50 Conference opening (Opening talk of Prof. A. G. Zagorodny)

Morning Session

10-00 **Prof. B.I. Lev**

Lecture “Non-equilibrium self-gravitating systems”
Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv

10-45 **O.I. Gerasymov, A.Ya. Spivak**

O.1 “Mechanical impulse transmission through 1D nonlinear chains”
Odesa State Environmental University, Odesa, Ukraine

11-05 **V.N. Gorev, A.I. Sokolovsky**

O.2 “Conservation laws for the Landau-Vlasov kinetic equation with the nonlocal collision integral”
National Mining University, Dnipro

11-25 **A. Vidybida, O. Shchur**

O.3 “Relation between firing statistics of spiking neuron with delayed fast inhibitory feedback and without feedback”
Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv

11-45 **A.G. Magner, M.I. Gorenstein, U.V. Grygoriev**

O.4 “Ultrasonic waves in classical gases”
Taras Shevchenko National University of Kyiv

12-05 **COFFEE BREAK**

12-25 **O.I. Gerasymov, I.A. Chernilevska**

O.5 “Levitation and jet-stream of micromechanical conglomerations in electric field”
Odesa State Environmental University

12-45 **K.M. Haponenko, A.I. Sokolovsky**
“Nonequilibrium thermodynamic potential for Bose system in the
O.6 presence of condensate”
Oles Honchar Dnipropetrovsk National University, Dnipro

13-05 **A.R. Kuzmak**
“Quantum state manifolds generated by the Lie algebra”
O.7 *Ivan Franko National University of Lviv*

13-25 **O.O. Morozko, Kh.P. Gnatenko**
“Many-particle system in noncommutative space with preserved
O.8 rotational symmetry”
Ivan Franko National University of Lviv

13-45 **D.V. Piatnytskyi, S.N. Volkov**
“Complexes of hydrogen peroxide and DNA phosphate group”
O.9 *Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv*

14-05 **O. Zdorevskyi, S.N. Volkov**
“Role of water and hydrogen peroxide molecules in nucleic base pairs
O.10 stabilization”
Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv

14-25 ***LUNCH***

Afternoon Session

15-30 **V. Sagun, Ilidio Lopes**
“Probing the neutron stars interior within the realistic equation of state”
O.11 *Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv*

15-50 **D. Savchenko, D. Iakubovskyi**
“Testing the origin of 3.55 keV line in individual galaxy clusters
O.12 observed with XMM-Newton”
Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv

- 16-10** **A. Rudakovskiy, D. Iakubovskiy**
“Cores in fermionic dark matter haloes with maximal phase-space density”
O.13 *Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv*
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- 16-30** **I. Babyk**
“AGN feedback in early-type galaxies”
O.14 *Main Astronomical Observatory of the National Academy of Science, Kyiv*
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- 16-50** **I. Bilinsky, P. Berczik, O. Veles**
“Performance testing of the TREE based modern GPU/N-body code implementation”
O.15 *Main Astronomical Observatory of the National Academy of Science, Kyiv*
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- 17-10** **M.G. Holovko, V.D. Gladush**
“On the quantization of charged black holes”
O.16 *Oles Honchar Dnipropetrovsk National University, Dnipro*
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- 17-30** ***WELCOME PARTY***
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Wednesday, December 13

Morning Session

- 10-00** **Dr. S.G. Sharapov**
Lecture “Graphene and other Dirac materials”
 Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv
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- 10-45** **K.V. Germash, D.V. Fil**
“Non-linear electromagnetic properties of double layer graphene systems with electron-hole pairing”
O.17 *Institute for Single Crystals of NAS of Ukraine, Kharkiv*
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- 11-05** **V.O. Shubnyi, Yu.V. Skrypnyk, S.G. Sharapov, V.M. Loktev**
“Effect of uniaxial strain on scattering from point defects in graphene”
O.18 *Taras Shevchenko National University of Kyiv*

11-25 **I.O. Starodub, Y. Zolotaryuk**
“Fluxon scattering on dipole inhomogeneity in Josephson junction”
O.19 *Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv*

11-45 ***COFFEE BREAK***

12-05 **O.Y. Pastukh, V.E. Sakhnyuk, D.M. Shvalikovskiy**
“The influence of an external magnetic field on the critical current in
O.20 SNINS contacts near the critical temperature”
Lesya Ukrainka Eastern European National University, Lutsk

12-25 **A.M. Shutowskiy, A.V. Svidzinsky, V.E. Sakhnyuk**
“The functional integration method in the two band superconductivity
O.21 theory”
Lesya Ukrainka Eastern European National University, Lutsk

12-45 **V.V. Bezghuba, A.A. Kordyuk**
“Brillouin zone of iron-based superconductor in kz direction”
O.22 *Kyiv Academic University*

13-05 **D.Y. Kononenko, O.V. Pylypovskyi, Yu. Gaididei, D.D. Sheka**
“Spin waves propagation in antiferromagnetic ring”
O.23 *Taras Shevchenko National University of Kyiv*

13-25 **A.I. Korniienko, O.V. Pylypovskyi, V.P. Kravchuk, D.D. Sheka,**
Yu. Gaididei
O.24 “Magnetic metamaterials: curvature induced magnonic crystals in
nanowires”
Taras Shevchenko National University of Kyiv

13-45 **C.M. Scherbakov, A.N. Morozovska, Yu. M. Vysochanskii**
“Spatially modulated incommensurate phases induced by flexoelectric
O.25 coupling in ferroelectrics”
Taras Shevchenko National University of Kyiv

14-05 ***LUNCH***

Afternoon Session

- 15-15** **O. Boliashova, V. Krivoruchko**
“Longitudinal spin dynamics in antiferromagnets: Diagrammatic approach”
O.26 *A.A. Galkin Donetsk Institute for Physics and Engineering, NAS of Ukraine, Kyiv*
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- 15-35** **O.R. Sulymenko, O.V. Prokopenko**
“THz-frequency AC signal source based on antiferromagnetic spin-Hall oscillator”
O.27 *Taras Shevchenko National University of Kyiv*
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- 15-55** **L.Yu. Kharkhalis, O.O. Korolevych, O.V. Dulkaï**
“Electronic structure of the InSe diluted magnetic semiconductors”
O.28 *Uzhhorod National University, Institute of Physics and Chemistry of Solid State*
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- 16-15** **E.A. Eliseev, I.S. Vorotiahin, Y.M. Fomichov, M.D. Glinchuk, S.V. Kalinin, Y.A. Genenko, A.N. Morozovska**
O.29 “Flexo-chemical coupling in ferroelectric thin films with defect layer”
Institute for Problems of Materials Science, NAS of Ukraine, Kyiv
Charles University, Prague, Czech Republic
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- 16-35** **S.E. Reschikoff**
“The bias error of flicker noise spectral exponent estimation”
O.30 *Ulyanovsk State Technical University, Ulyanovsk, Russia*
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- 16-55** **O.A. Hrebunov, V.F. Korolovych, L.A. Bulavin, L.Yu. Matsuy**
O.31 “Dielectric properties of nanocellulose aqueous suspension”
Taras Shevchenko National University of Kyiv

Thursday, December 14

Morning Session

- 10-00** **Dr. A.G. Magner**
Lecture “Kinetic approaches to the collective nuclear-matter dynamics”
Institute for Nuclear Research, NAS of Ukraine, Kyiv
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- 10-45** **O. Ivanytskyi, K. Bugaev, E Nikonov, E-M. Ilgenfritz, V. Sagun,**
 I. Mishustin, V. Petrov, G. Zinovjev
O.32 “The liquid droplet view on the phase transition in SU(2) gluodynamics”
Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv
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- 11-05** **R.V. Poberezhnyuk**
O.33 “Quantum van der Waals model versus Walecka model of nuclear matter”
Bogolyubov Institute for Theoretical Physics, NAS of Ukraine, Kyiv
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- 11-25** **N.V. Kolomoyets, V. Skalozub**
O.34 “Color structure of magnetic mass of chromomagnetic field”
Oles Honchar Dnipropetrovsk National University, Dnipro
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- 11-45** **P. Minaev, V. Skalozub**
O.35 “Electroweak phase transition in a spontaneously magnetized vacuum”
Oles Honchar Dnipropetrovsk National University, Dnipro
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- 12-05** **O. Panova**
O.36 “Cumulative production of nucleons by heavy baryonic resonances in
proton-nucleus collisions”
Taras Shevchenko National University of Kyiv
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- 12-25** **A. Pevzner, V. Skalozub**
O.37 “Possibility of the Abelian Z' with a non-narrow resonance within the
model-independent approach”
Oles Honchar Dnipropetrovsk National University, Dnipro
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- 12-45** *Juri consultation*
13-00 *Closing of the conference*