



# XXVII International Seminar NONLINEAR PHENOMENA IN COMPLEX SYSTEMS

*Chaos, Fractals, Phase Transitions, Self-organization*

Joint Institute for Power and Nuclear Research –  
"Sosny"

B.I. Stepanov Institute of Physics  
National Academy of Sciences of Belarus  
Joint Institute for Nuclear Research  
Belarusian State University  
Institute for Nuclear Problems

**Organizing Committee Chairman**  
Prof. V. I. Kuvshinov (JIPNR-Sosny NASB, Belarus)

**International Advisory Committee of Seminar**

Prof. Yu. L. Bolotin (ITP NSC KPTI, Ukraine)  
Prof. V. V. Burov (JINR, Dubna, Russia)  
Prof. A. E. Dorokhov (JINR, Dubna, Russia)  
Prof. I. M. Dremin (P.N. Lebedev Inst., Russia)  
Prof. I. D. Feranchuk (BSU)  
Prof. V. A. Gaisenok (NIHE, Belarus)  
Prof. R. C. Hwa (University of Oregon, Eugene USA)  
Prof. L. L. Jenkovszky (ITP NASU, Ukraine)  
Prof. N. S. Kazak (IP NASB, Belarus)  
Prof. S. Ya. Kilin (NASB, Belarus)  
Prof. W. Kittel (Austria)  
Prof. V. I. Kuvshinov (JIPNR-Sosny NASB, Belarus)  
Prof. S. A. Maksimenko (INP BSU, Belarus)  
Prof. P.V.E. McClintock (University of Lancaster, United Kingdom)  
Prof. M. Robnik (CAMTP, Maribor, Slovenia)  
Prof. N. F. Shul'ga (ITP NSC KPTI, Ukraine)  
Prof. A. L. Tolstik (BSU, Belarus)  
Prof. G. M. Zinoviev (ITP NASU, Ukraine)

**Organizing Committee of Seminar**

L. F. Babichev (JIPNR-Sosny NASB)  
E. G. Bagashov (JIPNR-Sosny NASB)  
Prof. V. G. Baryshevsky (INP BSU)  
Prof. A. N. Furs (BSU)  
M. V. Galynski (JIPNR-Sosny NASB)  
V. V. Gilewsky (JIPNR-Sosny NASB)  
K. A. Grishanova (Scientific Secretary) (JIPNR-Sosny NASB)  
T. N. Korbut (JIPNR-Sosny NASB)  
G. G. Krylov (BSU)  
Prof. Yu. A. Kurochkin (IP NASB)  
Prof. V. I. Kuvshinov (Chairman) (JIPNR-Sosny NASB)  
A. V. Kuzmin (JIPNR-Sosny NASB, Belarus)  
Prof. V. A. Savva (IP NASB)  
D. V. Serow (SPbSPU, Russia)  
V. A. Shaparau (Vice-Chairman) (JIPNR-Sosny NASB)  
R. G. Shulyakovskiy (IAP NASB)  
Prof. A. G. Trifonov (JIPNR-Sosny NASB)

**Subjects:** Above mentioned and other frontier topics in modern nonlinear study in

- \* **High energy physics and nuclear physics** (*QCD, perturbative and nonperturbative effects, confinement, physics inside/outside standard model, quark-gluon plasma, collective phenomena, physics of nuclear transmutations, the interaction of particles and nuclei, astrophysics and gravitation, neutrino physics, radiative corrections, Monte Carlo simulations*)
- \* **Nuclear power** (*modeling of neutron-physical, thermal-hydraulic and physico-chemical processes in nuclear and radiation installations; verification and validation of calculation codes for deterministic/probabilistic analysis of NPP safety; future nuclear reactors, nuclear and radiation technologies, radioactive waste and spent nuclear fuel management*)
- \* **Information processing** (*quantum computation and cryptography, neural networks, artificial intelligence, information technology, parallel calculations*)
- \* **Mathematical foundations and methods** (*classical and quantum chaos, chaos and tunneling, correlations, dynamical systems, integrable systems, analytical and numerical methods*)
- \* **Foundation of electronics and optics** (*nano-, micro-, opto- and quantum electronics, classical and quantum optics*)
- \* **Economics, social, biological and chemical systems** (*nonlinear dynamics in economics, social, biological and chemical systems and medicine*)

**The Joint Institute for Power and Nuclear Research – Sosny**  
**May 19-22, 2020 • Minsk • Belarus**

Financial support  
**National Academy of Sciences of Belarus**

**The State Scientific Institution «The Joint Institute for Power and Nuclear Research – Sosny» of the National Academy of Sciences of Belarus**

**P.O. Box 119 220109 • Minsk • Republic of Belarus**

**Fax: +375 (17) 3911335**

**Tel: +375 (17) 3911448**

**E-mail: npcs@sosny.bas-net.by**

**http://npcs.j-npcs.org**

