

Hot points in Astrophysics and Cosmology

Monday, 2. August

8.30-9.45 Registration (room 238, BLTP, second floor)

9.45-10.00 Opening

10.00-10.50 YU.N. GNEDIN (Saint-Petersburg, Russia)

Stars with Extremely Strong Magnetic Fields as Tools of Fundamental Physics

10.50-11.10 Cofee-break

11.10-12.00 V. CHECHETKIN (KIAM RAS, Russia)

The Mechanism Supernova Explosion Part 1.

12.00-15.00 Lunch

15.00-15.50 A. DORODNITSYN (IKI RAS, Russia)

"Accretion disk - wind connection"

15.50-16.40 M. PROKHOROV (SAI, Russia)

"Evolution of stellar populations and compact objects"

16.40-17.00 Cofee-break

17.00-17.50 D. VOSKRESENSKY (MEPI, Russia; GSI, Germany)

"Physics of neutron star interiors and cooling of neutron stars" Part 1.

Tuesday, 3. August

9.30-10.20 A. SEDRAKIAN (Tuebingen University, Germany)

"Pairing properties and the crust of neutron stars"

10.20-11.10 S. MOISEENKO (IKI RAS, Russia)

Magnetorotational supernova explosions. 2D MHD simulations

11.10-11.30 **Coffee-break**

11.30-12.20 V. CHECHETKIN (KIAM RAS, Russia)

The Mechanism Supernova Explosion Part 2.

12.20-15.00 **Lunch**

14.00 Seminar A. ISAEV (AITP, Ukraine)

"Spin polarised states in nuclear matter"

15.00-15.50 YU.N. GNEDIN (Saint-Petersburg, Russia)

Astronomy and Particle Physics: zones of intersection

15.50-16.40 L. PROKHOROV (St.-Petersburg)

"Quantum mechanics and cosmology" Part 1.

17.00 Seminar R. PASECHNIK (Rostov University, Russia)

"Neutral and charged Higgsino as carriers of residual SUSY effects"

19.00 Welcome Party (BLTP, second floor)

Wednesday, 4. August

9.30-10.20 D. VOSKRESENSKY (MEPI, Russia; GSI, Germany)

"Physics of neutron star interiors and cooling of neutron stars" Part 2.

10.20-11.10 P. FIZIEV (Sofia University, Bulgaria)

Gravitational field of massive point, (non)existence of Black Holes, and relativistic theory of stars

11.10-11.30 **Coffee-break**

11.30-12.20 YU.N. GNEDIN (Saint-Petersburg, Russia)

Axion Astronomy: Searching for Dark Matter Particles

12.20-15.00 **Lunch**

15.00-15.50 A. SEDRAKIAN (Tuebingen University, Germany)

"Neutrino production and propagation in dense matter"

15.50-16.40 M. MILLER (University of Maryland, USA)

"Quasi-Periodic Brightness Oscillations from Accreting Neutron Stars and Black Holes"

16.40-17.00 **Coffee-break**

17.00 **Seminars** T. ENDO (Kyoto University, Japan)

"Hadron quark matter phase transition in neutron stars"

Thursday, 5. August

9.30-10.20 J. YANG (Ewha Womans University, Korea)

"AMS experiment on international space station - Current status and the participation of Korean group"

10.20-11.10 T. TATSUMI (Kyoto University, Japan)

"Magnetic properties of quark matter"

11.10-11.30 Cofee-break

11.30-12.20 S. POPOV (University of Padova, Italy; SAI, Russia)

"Population synthesis of isolated neutron stars" Part 1.

12.20-15.00 Lunch

14.00 Seminar J. BERDERMANN (Rostock University, Germany)

"Direct URCA process in quark matter"

15.00-15.50 M. DABROWSKI (Inst. of Physics, University of Szczecin, Poland)

"Introduction to superstring and pre-big-bang cosmology"

15.50-16.40 L. PROKHOROV (St.-Petersburg)

"Quantum mechanics and cosmology" Part 2.

16.40-17.00 Cofee-break

17.00 Seminar N. MAKHALDIANI (JINR Dubna, Russia)

"Adelic universe and cosmological constant"

Friday, 6. August

9.30-10.20 M. DABROWSKI (Inst. of Physics, University of Szczecin, Poland)

"Relation between superstring, Brans-Dicke and conformal cosmologies"

10.20-11.10 T. TATSUMI (Kyoto University, Japan)

"Nuclear pasta structures in neutron stars and the Coulomb screening"

11.10-11.30 Cofee-break

11.30-12.20 D. NADYOZHIN (ITEP, Moscow)

"Nuclear Astrophysics (stellar nucleosynthesis)" Part 1. (an introductory overview)
Nuclear processes in stars and the origin of chemical elements

12.20-15.00 Lunch

16.00 Visit to FLNR

Saturday, 7. August

12.00-14.00 Visit to the Laboratory for High Energy Physics (LHE)

14.00 Shashlik

Sunday, 8 August

Excursion to Sergiev Posad

A religious center with spiritual academy and icon painter school

Monday, 9. August

9.30-10.20 D. KAZAKOV (BLTP JINR, Dubna)

The problem of the dark matter and its possible solution in Supersymmetric model
Part 1.

10.20-11.10 A. ZAKHAROV (ITEP, Russia)

"Observations of microimages and astrometric microlensing for distant quasars with
the space based radio telescope RADIOASTRON"

11.10-11.30 Cofee-break

11.30-12.20 A. DRAGO (Universita' di Ferrara, Italy)

Viscosity in compact stars

12.20-15.00 Lunch

15.00-15.50 S. POPOV (University of Padova, Italy; SAI, Russia)

"Population synthesis of isolated neutron stars" Part 2.

15.50-16.40 D. NADYOZHIN (ITEP, Moscow)

"Nuclear Astrophysics (stellar nucleosynthesis)" Part 2 The hydrogen and helium
burning in stars

16.40-17.00 Cofee-break

17.00 Seminars

Tuesday, 10. August

9.30-10.20 D. KAZAKOV (BLTP JINR, Dubna)

The problem of the dark matter and its possible solution in Supersymmetric model
Part 2.

10.20-11.10 A. DRAGO (Universita' di Ferrara, Italy)

Gravitational wave emission from compact stars

11.10-11.30 **Coffee-break**

11.30-12.20 V. MELNIKOV (CGFM, Russia)

"Cosmological Models with Fluids, Scalar Fields and Forms in Diverse Dimensions."
Part 1.

12.20-15.00 **Lunch**

14.00 Seminar T. BELOVA (ITEP, Russia)

"Black hole shells and solitary waves"

15.00-15.50 D. BLASCHKE (University Bielefeld, Germany & BLTP JINR Dubna)

Path integral approach to dense Fermi systems

15.50-16.40 A. DOROSHKEVICH (IPM RAS, Russia)

"Large Scale Structure in observations and simulations" Part 1.

16.40-17.00 **Coffee-break**

17.00 Seminar T. DENKIEWICZ (University of Szczecin, Poland)

"Density perturbations in the cyclic Universe"

Wednesday, 11. August

9.30-10.20 M. MILLER (University of Maryland, USA)

"Sources of Gravitational Radiation" Part 2.

10.20-11.10 A. DOROSHKEVICH (IPM RAS, Russia)

"Large Scale Structure in observations and simulations" Part 2.

11.10-11.30 Cofee-break

11.30-12.20 V. MELNIKOV (CGFM, Russia)

"Cosmological Models with Fluids, Scalar Fields and Forms in Diverse Dimensions."
Part 2.

12.20-15.00 Lunch

15.00-15.50 I. SHOVKOVY (ITP, J.W. Goethe-University, Germany)

"Introduction to Color Superconductivity"

15.50-16.40 H. GRIGORIAN (Rostock University, Germany)

"Hybrid star configuration"

16.40-17.00 Cofee-break

17.00 Seminar A. ZORIN (JINR, Russia)

"The Universe evolution as a possible mechanism of formation of galaxies and their clusters"

Thursday, 12. August

9.30-10.20 D. BLASCHKE (University Bielefeld, Germany & BLTP JINR Dubna)

Phase diagram of strongly interacting matter

10.20-11.10 I. SHOVKOVY (ITP, J.W. Goethe-University, Germany)

Color superconductivity in neutral matter

11.10-11.30 **Coffee-break**

11.30-12.20 D. NADYOZHIN (ITEP, Moscow)

"Nuclear Astrophysics (stellar nucleosynthesis)" Part 3 The explosive nucleosynthesis in supernovae. The role of weak interaction (beta-processes) in stellar evolution and nucleosynthesis.

12.20-15.00 **Lunch**

14.00 Seminar A. ZAKHAROV (ITEP, Russia)

"The iron K_α -line as a tool for analysis of black hole characteristics"

15.00-15.50 A. BURINSKII (Russia)

Rotating Black Holes in the Kerr-Schild Approach: Structure of the Solution and Astrophysical Applications Part 1.

15.50-16.40 G. POGHOSYAN (Basel University, Switzerland)

Influence of the deconfinement phase transition on binary neutron star mergers

16.40-17.00 **Coffee-break**

17.00 Seminar I. PARENTI (Ferrara Univ. Italy)

Quark deconfinement in compact stars: connection to gamma ray bursts

Friday, 13. August

9.30-10.20 A. BURINSKII (Russia)

Rotating Black Holes in the Kerr-Schild Approach: Structure of the Solution and Astrophysical Applications Part 2.

10.20-11.10 H. GRIGORIAN (Rostock University, Germany)

"Hot neutron and quark star evolution"

11.10-11.30 Cofee-break

11.30-12.20 A. ZAKHAROV (ITEP, Russia)

Dark matter searches with an analysis of microlensing for distant quasars

12.30-13.00 D.V. SHIRKOV (BLTP JINR, Dubna)

"The history of JINR"

13.00 Closing

Farewell Banquet (in bufet)