

JOINT INSTITUTE FOR NUCLEAR RESEARCH

INDIA-JINR FORUM

“Frontiers in Elementary Particle, Nuclear and Condensed Matter Physics”

Dubna, June 16-20, 2014

June 16

10:00 – 13:30: Plenary session (International Meeting House)

10:00 Opening (JINR Directorate, Representative of Indian Scientists, Embassy of Rep. of India, Ministry of Science and Education of RF , “Rossotrudnichestvo”)

10:30 **V.A. Matveev** , “Joint Institute for Nuclear Research: past, present and future”

11:00-11:30 Coffee break

11:30 **M.G. Itkis**, “Nuclear and Condensed Matter Physics at JINR”

12:00 **D.C. Biswas**, “Nuclear reaction and structure research activities at BARC, Mumbai”

12:30 **R. Lednicky**, “Elementary Particle and Relativistic Heavy Ion Physics”

13:00-14:00 Lunch

14:00 – 16:00: Plenary session (International Meeting House)

14:00 **R. Sinha**, “Elementary particle physics in India”

14:30 **A. Srivastava**, “Relativistic Heavy Ion Physics”

15:00 **V. Kekelidze**, “NICA mega-project ”

16.00-18:00 Visit to **Veksler and Baldin Laboratory of High Energy Physics**

19:00 **Welcome Party** (JINR Scientific Club)

June 17

9.30 -11:00 Visit to **Frank Laboratory of Neutron Physics**

11.00-11.30 Coffee break (FLNR)

11:30-13:00 Visit to **Flerov Laboratory of Nuclear Reactions**

13.00-14.00 Lunch

14:00-16:00 Plenary Session (BLTP Conference Hall)

14.00 **V. Voronov** (BLTP JINR)

Theoretical Physics at BLTP

14:30 **T.V. Ramakrishnan** (Indian Institute of Science)

Condensed Matter Physics in India

15:00 **R. Mukhopadhyay** (BARC)

Condensed Matter Physics Research in Department of Atomic Energy

15:30 **V. Priezzhev** (BLTP JINR)

Deepak Dhar and statistical mechanics in BLTP

16:00-16:30 Coffee break

16:30-18:30 Theory of Condensed Matter (Blokhintsev Hall, BLTP)

16:30 **K. Sengupta** (IACS, India)

Non-equilibrium dynamics of isolated quantum many-body systems

17:00 **P. Ray** (The Institute of Mathematical Sciences)

Statistical physics of fracture

17:30 **N. Plakida** (BLTP JINR)

Theory of high-temperature superconductivity

18:00 **Yu. Shukrinov** (BLTP JINR)

Resonance features of coupled Josephson junctions

18:30 **M. Maiti** (BLTP JINR)

Fidelity and entanglement in the symmetry protected topological phase of the open SSH model

16:30-18:30 Theory of Atomic Nuclei (BLTP Conference Hall)

16:30 **R. Jolos** (BLTP JINR)

Structure of nuclei with $Z \sim 100$

17:00 **S. Kumar** (Chitkara University)

Synthesis of Superheavy Elements and Alpha Decay Studies

17:30 **V. Melezhik** (BLTP JINR)

Ultracold few-body systems in optical traps

18:00 **A. Severyukhin** (BLTP JINR)

Impact of variational space on M1 transitions between first and second quadrupole excitations in $^{132,134,136}\text{Te}$

18:30 **A. Nasirov** (BLTP JINR)

Effect of shell structure and orientation angles of nuclei in formation of the reaction products

June 18

8:00 – 18:00 Excursion to Moscow

19:00 Reception (Restaurant “Dubna”)

June 19

9:30-18:00 Workshops and Seminars at JINR Laboratories

19:00 Concert (JINR Scientific Club)

20:00 Light Dinner (Scientific Club)

VBLHEP

Sh. Dugad (Tata Institute of Fundamental research, India)
Upgrade of Outer Hadron Calorimeter

FLNR

9:30 **D.C. Biswas** (Bhabha Atomic Research Centre)
Nuclear reaction and structure research activities at BARC, Mumbai

10:00 **A. Popeko** (FLNR JINR)
Status of the FLNR DRIBs-III project

10:30 **S. Bhattacharya** (Homi Bhabha National Institute)
Nuclear physics activities at VECC

11:00 **V. Utyonkov** (FLNR JINR)
Synthesis of superheavy nuclei

11:30-12:00 Coffee break

12:00 **M. Narayanasamy** (Inter University Accelerator Centre, India)
Angular momentum distributions in fusion-evaporation reactions involving heavy nuclei

12:30 **A. Eremin** (FLNR JINR)
Nuclear spectroscopy of transfermium nuclei at FLNR

13:00 **A. Fomichev** (FLNR JINR)
Investigation of light exotic nuclei at FLNR

13:00-15:00 Lunch

15:00 Excursion to the **Phasotron and Medical Technical Complex for proton therapy** (DLNP JINR)

FLNP

- 10:00 **A.M. Balagurov** (FLNP JINR)
Neutron Scattering from Condensed Matter
- 10:30 **R. Mukhopadhyay** (BARC)
Dynamical Heterogeneity in Ionic Micelles-Neutron Scattering and
Computer Simulation Studies
- 11:00 **Sh. Varma** (Institute of Physics)
Nano structures & Nano-bio studies with low energy ion accelerators

11:30 Coffee break

- 12:00 **A.I. Kuklin** (FLNP JINR)
Through the Optics of Small Angle Neutron Scattering
- 12:30 **M.V. Avdeev** (FLNP JINR)
Neutron Reflectometry in Studies of Layered Structures at Interfaces

13:00-15:00 Lunch

15:00 Excursion to the **Phasotron and Medical Technical Complex for proton therapy** (DLNP JINR)

DLNP

- 10:00-10:10 Opening
- 10:10 **M. Gonchar** (DLNP, JINR)
Recent results from Daya Bay experiment and JUNO project
- 10:30 **U. Datta Pramanik** (Saha Institute of Nuclear Physics)
Neutrino physics and exotic nuclei
- 11:00 **O. Samoylov** (DLNP JINR)
Status of the NOvA experiment

11:20 Coffee break

- 11:40 **P. Rath** (University of Lucknow)
Neutrino Physics and Neutrinoless Double Beta Decay
- 12:10 **V. Nanal** (Tata Institute of Fundamental Research)
Feasibility study for neutrinoless double beta decay in ^{124}Sn
- 12:40 **V. Tretyak** (DLNP JINR)
Search for neutrinoless double beta decay with NEMO-3 and SuperNEMO
- 13:00 **M. Shirchenko** (DLNP JINR)
Project GERDA

13:20-15:00 Lunch

15:00 Excursion to **Phasotron and Medical Technical Complex** for proton therapy (DLNP JINR)

BLTP

10:00-17:30 **Mathematical Physics & Cosmology** (BLTP Conference Hall)

9:30 **S. Fedoruk** (BLTP JINR)

New models of supersymmetric quantum mechanics and supersymmetric field theories

10:00 **D. Gangopadhyay** (Ramakrishna Mission Vivekananda University)

Hawking temperature in the context of dark energy

10:30 **B. Saha** (LIT JINR)

Spinor field in cosmology: Problems and Possibilities

11:00-11:30 Coffee Break

11:30 **S. Mohanty** (Physical Research Laboratory)

Bogoliubov mixing of the inflationary tensor perturbations

12:00 **A. Baushev** (DESY, Germany)

Dark matter as an astrophysical object: how to fit observational data?

12:30 **A. Khvedelidze** (LIT JINR)

Towards an algebraic description of the mixed quantum states

13:00-14:30 Lunch

14:30 **P. Mukhopadhyay** (The Institute of Mathematical Sciences)

Non-linear sigma model, loop space and tubular geometry

15:00 **K. Ray** (Indian Association for the Cultivation of Science)

Partition function of Beta-Gamma system on some orbifolds

15:30 **N. Tyurin** (BLTP JINR)

Exotic Lagrangian tori in toric symplectic manifolds

16:00-16:30 Coffee Break

16:30 **I. Pirozhenko** (BLTP JINR)

Mathematical aspects of quantum vacuum studies

17:00 **A. Silenko** (BLTP JINR)

General properties of a Dirac particle in Riemannian spacetimes

9:30-17:30: Elementary Particle and Hadron Physics (Blokhintsev Hall, BLTP)

- 9:30 **O. Teryaev** (BLTP JINR)
Spin structure of nucleon and sum rules
- 10:00 **A. Raychaudhuri** (University of Calcutta)
Relating θ_{13} to the solar mass splitting
- 10:30 **D. Kazakov** (BLTP JINR)
Constraints on Supersymmetry using LHC data

11:00-11:30 Coffee Break

- 11:30 **A. Arbuzov** (BLTP JINR)
Spontaneous breaking of conformal symmetry in the Standard Model
- 12:00 **S. Ghosh** (Indian Statistical Institute)
On the possibility of an inherent short distance scale in higher derivative (horava) gravity theory
- 12:30 **M. Deka** (BLTP JINR)
Proton spin from lattice QCD

12:30-14:00 Lunch

- 14:00 **V. Toneev** (BLTP JINR)
Is there a puzzle with directed flow
- 14:30 **A. Srivastava** (Institute of Physics, India)
Anisotropies and fluctuations in heavy-ion collisions and in cosmic microwave background
- 15:00 **E.-M. Ilgenfritz** (BLTP & VBLHEP JINR)
Phase structure and equation of state for QCD with 2 and 2+1+1 flavors in the twisted mass approach

15:30-16:00 Coffee Break

- 16:00 **R. Sinha** (The Institute of Mathematical Sciences)
Looking for New Physics Effects in $B \rightarrow K^* \mu^+ \mu^-$
- 16:30 **M. Ivanov** (BLTP JINR)
B-meson Physics in Covariant Quark Model
- 17:00 **A. Dorokhov** (BLTP JINR)
Muon magnetic moment as a test of Standard Model

19:00 Concert (JINR Scientific Club)

20:00 Light Dinner (Scientific Club)

June 20

9:30-11:30 Plenary session (International Meeting House)

9:30 A. Ruzaev, “JINR Innovation Activities”

10:00 V. Bednyakov, “Neutrino Physics Program at JINR”

10:30 A. Raychaudhuri, “Neutrino Physics in India”

11:00 S. Pakuliak, “Educational Programs of the JINR University Center”

11:30-12:00 Coffee Break

12:00-13:00 Round table discussion (Indian participants, JINR Directorate, JINR Laboratories)

13:00 Closing

Lunch