

The Conference "RFBR Grants for NICA"

Tuesday, 20 October 2020 - Friday, 23 October 2020

VBLHEP, JINR, Dubna, RUSSIA
Programme

Tuesday 20 October 2020

Overview session (08:55-10:40)

-Conveners: Tserruya, Itzhak (Weizmann Institute of Science)

time	title	presenter
09:00	The Physics Case for NICA	CLEYMANS, Jean (Univeristy of Cape Town)
09:25	ALICE	MUSA, Luciano (Spokesperson of ALICE experiment)
09:50	Review of the HADES experiment	GALATYUK, Tetyana
10:15	CBM Physics Performance and Analysis Methods	KLOCHKOV, Viktor (University of Tuebingen)

Coffee (10:40-11:00)

Opening session (11:00-11:50)

-Conveners: Matveev, Victor (Director of JINR, Academician of the RAS)

time	title	presenter
11:00	Welcome	MATVEEV, Victor (Director of JINR, Academician of the RAS)
11:08	Welcome	TRUBNIKOV, Grigory (First Vice-Director of JINR, Academician of the RAS)
11:15	Russian Foundation for Basic Research & Grant Programs and NICA Program	KVARDAKOV, Vladimir (Deputy Chairman of RFBR, corresponding Member of RAS,)

11:40	Welcome	KEKELIDZE, Vladimir (Acting Vice-Director of JINR for the NICA megascience project, Corresponding Member of the RAS)
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Overview session (11:50-13:30)

-Conveners: Kekelidze, Vladimir (Acting Vice-Director of JINR for the NICA megascience project, Corresponding Member of the RAS)

time	title	presenter
11:50	NICA Overview	TRUBNIKOV, Grigory (First Vice-Director of JINR, Academician of the RAS)
12:15	MPD Overview	KISIEL, Adam (Warsaw University of Technology)
12:40	Review of the BM@N physics and upgrade program	SENGER, Peter
13:05	JINR contribution to physics program at NICA	TERYAEV, Oleg (JINR)

Lunch (13:30-14:30)

Overview session (14:30-16:10)

-Conveners: Kisiel, Adam (Warsaw University of Technology)

time	title	presenter
14:30	Review of the CERN SPS heavy ion programmes	GAŹDZICKI, Marek (CERN)
14:55	Review of the SPD program and detector	GUSKOV, Alexey (JINR)
15:20	The STAR Beam Energy Scan Program at RHIC	BELLWIED, Rene (University of Houston)

15:45	RHIC – Beam Energy Scan Program: STAR Experimental Highlights	MOHANTY, Bedangadas (NISER School of Physical Sciences, India)
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Excursion to NICA construction site: NICA tour for RFBR delegation

(14:30-16:10)

Coffee (16:10-16:30)

Theoretical studies of the dense baryonic matter produced in heavy-ion collisions at NICA (16:30-18:10)

-Conveners: Teryaev, Oleg (JINR)

time	title	presenter
16:30	Polarization of elementary particles in heavy ion collisions as a manifestation of anomalies in quantum field theory	ZAKHAROV, Valentin
16:55	Lattice study of the properties of QCD in extreme conditions: temperature and density, rotation, magnetic field.	BRAGUTA, Victor (ITEP)
17:20	Nonequilibrium properties of quark-gluon matter at energies of the NICA collider	DREMIN, Igor
17:45	Investigation of parity nonconservation processes in the scattering of longitudinally polarized protons by a deuteron	NIKOLAEV, Nikolai (Landau Institute for Theoretical Physics)

Wednesday 21 October 2020

Collectivity and correlations (collective flow and vorticity; HBT and correlations) (09:00-10:40)

-Conveners: Kisiel, Adam (Warsaw University of Technology)

time	title	presenter
09:00	Study of vorticity, directional flow and freezeout in A + A collisions at energies of the NICA collider	BRAVINA, Larissa (University of Oslo (Norway))
09:25	Anisotropic collective flows and development of a technique for their measurement at the MPD facility of the NICA collider	TARANENKO, Arkadiy (NRNU MEPhI)
09:50	Investigation of the properties of strongly interacting matter at energies of the NICA collider using femtoscopy and factorial moments.	MALININA, Ludmila (SINP MSU-JINR)
10:15	BM@N data analysis of a single nucleon and two-nucleon Short Range Correlations in nuclei	PATSYUK, Maria (MIT)

Coffee (10:40-11:10)

Global characteristics of heavy-ion collisions at NICA (11:10-12:50)

-Conveners: Riabov, Viktor (PNPI)

time	title	presenter
11:10	Investigation of initial states and development of methods for their analysis in proton and nuclear collisions at energies of the NICA collider.	FEOFILOV, Grigory (Saint-Petersburg State University)

11:35	Measurements of spectators with Forward Hadron Calorimeter in MPD/NICA experiment	IVASHKIN, Alexander (INR RAS, Moscow)
12:00	Properties of Spectator Matter in Nuclear Collisions at the NICA Collider	PSHENICHNOV, Igor (Institute for Nuclear Research, Russian Academy of Sciences)
12:25	Measurements of centrality in nucleus-nucleus collisions at the BM@N experiment	GUBER, Fedor (INR RAS, Moscow)

Lunch (12:50-14:00)

Theoretical studies of the dense baryonic matter produced in heavy-ion collisions at NICA (14:00-16:05)

-Conveners: Teryaev, Oleg (JINR)

time	title	presenter
14:00	Study of the signals of hot and dense nuclear matter in heavy ion collisions at the energies of the NICA complex using micro- and macroscopic models	ZABRODIN, Evgeny (Department of Physics, University of Oslo)
14:25	Investigation of dense baryonic matter by lattice quantum chromodynamics methods	BORNYAKOV, Vitaly (IHEP, Protvino)
14:50	Investigation of the properties of nuclear matter under conditions of extreme temperatures and densities attainable at the energies of the NICA accelerator complex	KALINOVSKY, Yuri (Joint Institute for Nuclear Research)
15:15	Study of the phase diagram of dense quark-gluon plasma from the first principles of the theory, enhanced by machine learning methods	MOLOCHKOV, Alexander (Pacific Quantum Center, Far Eastern Federal University (FEFU), Vladivostok, Russia)

15:40	Theoretical studies of the formation and properties of quark-gluon matter under conditions of high baryon densities attainable at the NICA experimental complex	AREFIEVA, Irina (Steklov Mathematical Institute of Russian Academy of Sciences)
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Coffee (16:05-16:25)

Thursday 22 October 2020

Calorimetry and electromagnetic probes (09:00-10:40)

-Conveners: Tserruya, Itzhak (Weizmann Institute of Science)

time	title	presenter
09:00	Optimization of registration and separation of particles in an electromagnetic calorimeter of the "Shashlyk" type with a projective	BRITVICH, Gennady
09:25	The study of characteristics and calibration of the electromagnetic calorimeter for the NICA/MPD detector	MARTEMIANOV, Maxim (SRC "Kurchatov institute" - ITEP, 117218 Moscow, Russia)
09:50	Measurement of thermal photons and neutral mesons by registration of conversion $e + e^-$ pairs in the MPD experimental setup at the NICA collider.	KRYSHEN, Evgeny (NRC "Kurchatov Institute", Petersburg Nuclear Physics Institute)
10:15	Simulation of the electromagnetic calorimeter of the MPD detector and related tasks of the physics program of the NICA project	KULIKOV, Viacheslav (SRC "Kurchatov institute" - ITEP)

Coffee (10:40-11:10)

Precision tracking and the production of light hadrons, strangeness,

hypernuclei, and heavy-flavor (11:10-12:50)

-Conveners: Kisiel, Adam (Warsaw University of Technology)

time	title	presenter
11:10	Event reconstruction and physics signal selection in the MPD experiment at NICA	ZINCHENKO, Alexander (Joint Institute for Nuclear Research)

11:35	MPD prospects for the study of the strangeness production and strangeness-to-entropy ratio at NICA energies	KOLESNIKOV, Vadim (VBLHEP, JINR)
12:00	Study of production features, modeling and optimization of algorithms for reconstruction of short-lived hadron resonances in the MPD experimental setup at the NICA collider	RIABOV, Viktor (PNPI)
12:25	Study of the production of hyperons, strange mesons and the search for hypernuclei in the interactions of beams of carbon, argon and krypton in the BM@N experiment	KAPISHIN, Mikhail (JINR, LHEP)

Lunch (12:50-14:00)

Big data processing and species recognition (14:00-14:50)

-Conveners: Riabov, Viktor (PNPI)

time	title	presenter
14:00	Improvement of information systems for online and offline data processing of experimental installations of the NICA complex	GERTSENBERGER, Konstantin (JINR)
14:25	Development and software implementation of optimal algorithms for event reconstruction, evaluation of the quality of event reconstruction and simulation of detector components in the BM@N experiment of the NICA project	NEMNYUGIN, Sergei (Saint-Petersburg State University)

Parallel session I (14:50-18:10)

-Conveners: Kapishin, Mikhail (JINR, LHEP); Batyuk, Pavel (Joint Institute for Nuclear Research)

time	title	presenter
14:50	Development of the Vector Finder toolkit for track reconstruction in MPD ITS	ZINCHENKO, Dmitry (JINR)
15:10	Evaluation of prospects for hypernuclei studies with MPD at NICA	DRNOYAN, Julieta
15:30	Performance evaluation of the upgraded BM@N setup for the strangeness production studies	ZINCHENKO, Alexander (Joint Institute for Nuclear Research)
15:50	MPD ITS physical simulations status: focus on charmed probes with the MPD on charmed probes with the MPD	KONDRATEV, Valery (Saint-Petersburg State University)
16:10	Coffee	
16:30	Physics with charmonia at SPD	DENISENKO, Igor (JINR)
16:50	Software for track and vertex reconstruction for SPD experiment	ANDREEV, Vladimir (LPI, Moscow)
17:10	Electron identification from dE/dx measurements in the MPD TPC	RUFANOV, Igor
17:30	Calibration and alignment tasks for MPD TPC	BYCHKOV, Alexander (LHEP)
17:50	Event display for MPD detectors	KRYLOV , Alexander (JINR (VBLHEP))

Parallel session II (14:50-18:10)

-Conveners: Gertsenberger, Konstantin (JINR); Nigmatkulov, Grigory (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute))

time	title	presenter
14:50	Global Track and vertex reconstruction in SRC and argon beam BM@N experiment	MERTS, Sergei (JINR, LHEP)

15:10	Analysis of nucleus fragments in SRC run with BM@N setup	PANIN, Valeri
15:30	Quasi-elastic knock-out of the nucleon from short-range correlated NN pair in the reaction $^{12}\text{C}(p,2pN)^{10}\text{A}$	UZIKOV, Yury (Joint Institute for Nuclear Researches)
15:50	New Monte-Carlo generator of heavy ion collisions DCM-SMM and its usage for NICA mega project	MUSULMANBEKOV, Genis (JINR, LIT)
16:10	Coffee	
16:30	Packages for data storage and femtoscopic analysis	NIGMATKULOV, Grigory (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)) BATYUK, Pavel (Joint Institute for Nuclear Research)
16:50	Development of algorithms of calibration of the time-of-flight system of the MPD	KLYUEV, Aleksandr (Belgorod State University)
17:10	Development of the Geometry Information System for the NICA experiments	ALEXANDROV, Evgeny (JINR)
17:30	Development of computing infrastructure for distributed data processing for SPD experiment	OLEYNIK, Danila (JINR LIT)
17:50	Integration of distributed heterogeneous computing resources for the MPD experiment with DIRAC Interware	PELEVANYUK, Igor (Joint Institute for Nuclear Research)

Parallel session III (14:50-18:10)

-Conveners: Kodolova, Olga (SINP MSU); Riabov, Viktor (PNPI)

time title

presenter

14:50	Factorial moments in NICA MPD experiment	KODOLOVA, Olga (SINP MSU)
15:10	What do anisotropic flow measurements can tell us about the matter created in the little bang at NICA?	PARFENOV, Peter (MEPhI, Moscow)
15:30	The comparison of methods for anisotropic flow measurements with the MPD Experiment at NICA	IDRISOV, Dim (MEPhI)
15:50	New approach for centrality determination with FHCAL in BM@N experiment	KARPUSHKIN, Nikolay (Institute for Nuclear Research of the Russian Academy of Sciences)
16:10	Coffee	
16:30	Neutral mesons and dielectrons	RIABOV, Viktor (PNPI)
16:50	Feasibility study for the net-proton and net-kaon event-by-event fluctuations measurements with the MPD detector	MUDROKH, Alexander (JINR)
17:10	Direct photon production in heavy-ion collisions at NICA and FAIR energies	PERESUNKO, Dmitri (NRC "Kurchatov institute")
17:30	TBA	

Friday 23 October 2020

Big data processing and species recognition (09:00-10:15)

-Conveners: Kapishin, Mikhail (JINR, LHEP)

time	title	presenter
09:00	Supercomputer "Govorun" for the NICA megascience project	PODGAINY, Dmitry (JINR)
09:25	Development and improvement of methods and algorithms for modeling and reconstruction of data from BM@N and MPD experiments of the NICA project	ROGACHEVSKIY, Oleg (JINR)
09:50	Status of activity on calibration, matching, and identification of charged particles for the time-of-flight system of the MPD	BABKIN, Vadim (Joint Institute for Nuclear Research)

Development of detectors and detection methods for NICA experiments

(10:15-11:05)

-Conveners: Kapishin, Mikhail (JINR, LHEP)

time	title	presenter
10:15	Development of a silicon track system for the BM@N experiment	MERKIN, Mikhail (SINP MSU)
10:40	Fast data-driven readout system for the wide aperture Silicon Tracking System of NICA-BM@N experiment	VORONIN, Alexander (SINP, Moscow) DEMENTEV, Dmitrii (JINR LHEP)

Coffee - Conference hall (11:05-11:30)

Development of detectors and detection methods for NICA experiments

(11:30-13:10)

-Conveners: Kolesnikov, Vadim (VBLHEP, JINR)

time	title	presenter
11:30	Internal tracking system based on monolithic active pixel sensors ALPIDE for studying the formation of charmed particles in collisions of relativistic heavy ions at the NICA-MPD facility	MURIN, Yuri (Joint Institute for Nuclear Research (RU))
11:55	Detection methods and data analysis for silicon pixel vertex detectors for the experimental set-ups of the NICA complex	ZHEREBCHEVSKY, Vladimir (Saint-Petersburg State University)
12:20	Development of data concentration method and its implementation in radiation-hard CMOS application specific integrated circuit	EDUARD , Atkin (NRNU MEPhI)
12:45	Studying periphery of the nucleon in diffractive scattering at SPD	DALKAROV, Oleg (LPI)

Lunch (13:10-14:20)

Parallel session IV (14:20-17:40)

-Conveners: Murin, Yuri (Joint Institute for Nuclear Research (RU))

time	title	presenter
14:20	Status of HIC assembly preparations in Russia and China	SHEREMETEV, Aleksie (Joint Institute for Nuclear Research)
14:40	Progress in design and production of ultra-light mechanics for the MPD ITS and its integration scenario with the MPD TPC	VORONIN, Alexey (JINR LHEP)
15:00	Front-end readout electronics for BM@N STS	SHITENKOV, Mikhail (JINR)
15:20	Bonding test procedure developed for the assembly of BM@N STS modules	KOLOZHVARI, Anatoly (JINR)

15:40	Coffee	
16:00	Status of the BM@N STS module assembly	SUKHOV, Nikita (JINR)
16:20	Progress in preparations for the BM@N STS ladder assembly	ELSHA, Vladimir (Joint Institute for Nuclear Research (RU))
16:40	Laser setup for quality assurance of BM@N silicon tracking modules	KHARLAMOV, Petr (SINP MSU, LHEP JINR)
17:00	The studies of the monolithic active pixel sensors characteristics and investigations of new ultra-lightweight support and cooling carbon-fiber structures with high radiation transparency for MPD vertex detector	NESTEROV, Dmitrii (St Petersburg State University)
17:20	TBA	

Theoretical studies of the dense baryonic matter produced in heavy-ion collisions at NICA: Parallel session V (14:20-18:00)

-Conveners: Teryaev, Oleg (JINR)

time	title	presenter
14:20	Quantum-field effects of acceleration and vorticity in QCD: polarization, geometry and statistics	PROKHOROV, George (Dubna, BLTP)
14:40	Holographic studies of a heavy quark motion in rotating quark-gluon plasma	GOLUBTSOVA, Anastasia (Bogoliubov Laboratory of Theoretical Physics, Joint Institute for Nuclear Research)
15:00	Quantum fields in Keldysh-Schwinger diagram technique and semiclassical expansion	RADOVSKAYA , Anna (Lebedev Physical Institute of RAS)
15:20	Spin polarization in relativistic heavy-ion collisions (at NICA)	IVANOV, Yuri B. (BLTP JINR)

15:40	Coffee	
16:00	Lattice study of the confinement/deconfinement phase transition in SU(3)-gluodynamics in rotating frames	ROENKO, Artem (JINR, BLTP)
16:20	Phase diagram structure and kaon-to-pion ratios in the entanglement SU(3) PNJL model in Breit-Wigner and Beth-Uhlenbeck approaches	FRIESEN, Alexandra (Joint Institute for Nuclear Research)
16:40	FLUCTUATION PHENOMENA IN THE PRECRITICAL REGION	KERBIKOV, Boris (ITEP and Lebedev)
17:00	Holographic model for anisotropic QGP with external magnetic field	RANNU, Kristina (Academic Research Institute of Gravitation and Cosmology, Peoples Friendship University of Russia (RUDN))
17:20	Holographic Anisotropic Model with Confinement-Deconfinement Phase Transition for Light and Heavy Quarks	SLEPOV, Pavel (MSU)
17:40	Stability of shock waves in anisotropic hydrodynamics	KOVALENKO, Aleksandr (Lomonosov Moscow State University)

Parallel session V (14:20-17:40)

-Conveners: Guskov, Alexey (JINR)

time	title	presenter
14:20	SPD Range (muon) System	GOLOVANOV, Georgy (DLNP JINR)
14:40	Beams of the LPI synchrotron "Pakhra" for calibration of NICA detectors	BASKOV, Vladimir (P N Lebedev Physical Institute of the Russian Academy of Sciences)
15:00	MiniSPD testing facility	ENIK, Temur (Joint Institute for Nuclear Research (RU))

15:20	Hyperons in Bi+Bi collisions at MPD-NICA: Preliminary analysis of production at generation, simulation and reconstruction level	MALDONADO, Ivonne (Universidad Autónoma de Sinaloa)
15:40	Coffee	
16:00	Clusters of cold dense nuclear matter and their registration with the MPD vertex detector	VECHERNIN, Vladimir (St. Petersburg State University)
16:20	Developments of the new algorithms and data analysis methods for charge particles track identification with using monolithic active pixel sensors	RAKHMATULLINA, Alina (SPbSU)
16:40	Telescope system for the characterization and qualification of the monolithic active pixel sensors	PROKOFIEV, N.A.
17:00	ELECTROMAGNETIC CALORIMETER PROTOTYPE IN THE SPD EXPERIMENT	GAVRISCHUK, Oleg (JINR)
17:20	Silicon detector quality control demonstrator in LPI Moscow	NECHAEVA, Polina (Lebedev Physical Institute)