Montenegro, Budva, Becici, 30 September – 4 October 2019

Monday 30 September 2019

Registration - Splendid Conference & SPA Resort, 3rd floor (08:30-09:30)

Welcome speeches - Conference Hall Petroviċa (09:30-10:20)

- Conveners: Dr. Korenkov, Vladimir

09:30	Welcome from Montenegro officials	
09:40	Welcome from Organizing Committee	
09:50	Welcome from Sponsors	

Plenary - Conference Hall Petroviċa (10:20-11:20)

- Conveners: Dr. KORENKOV, Vladimir

10:20	Scientific Program of JINR	Prof. MATVEEV, Victor
10:50	Modern Heavy Ion Accelerator Facilities in JINR and Worldwide	Prof. SHARKOV, Boris

Coffee break - Conference Bar (11:20-11:40)

Plenary - Conference Hall Petroviċa (11:40-13:40)

- Conveners: Dr. KURTYKA, Tadeusz

11:40	CERN – JINR Collaboration: Past, Present and Future	Dr. KURTYKA, Tadeusz
12:10	IT and LIT– strategy of development	Dr. KORENKOV, Vladimir
12:40	NICA project at JINR	Dr. ROGACHEVSKIY, Oleg
13:10	Monitoring and Accounting for the Distributed Computing System of the ATLAS Experiment	Prof. BARBERIS, Dario

LUNCH - 13:40-15:00

Plenary - Conference Hall Petroviċa (15:00-19:00)

- Conveners: Prof. GOLUTVIN, Igor

15:00	Precision Luminosity Measurement with the CMS detector for HL-LHC	Dr. POPOVA, Elena *On behalf CMS Collaboration*
15:30	Toward the borders of nuclear stability: exploration of exotic nuclei in FLNR	Dr. SIDORCHUK, Sergey

Coffee break - Conference Bar (16:00-16:30)

Plenary - Conference Hall Petroviċa (16:30-19:00)

- Conveners: Dr.VALASSI, Andrea

16:30	Making Supercomputers Smart: the Moscow State University Experience	SOBOLEV, Sergey
17:00	MC2E: Meta-Cloud Computing Environment for HPC	SMELIANSKY, Ruslan
17:30	RDIG-M – Russian Data Intensive Grid for Megascience	VELIKHOV, Vasiliy
18:00	IBM POWER9. Summit - what doing most powerful supercomputer	PEREVOZCHIKOV, Alexey *NIAGARA COMPUTERS*

| 18:20 | CISCO Solutions for Compute, Storage and Networking Infrastructure | LOGUNTSOV, Evgeny *CISCO* |
| 18:40 | Convergence is a new HPC paradigm | SEMIN, Andrey |

<u>Welcome Party (Drinks&Buffet)</u> - Conference Bar (20:30-22:30)

Tuesday 1 October 2019

Plenary - Conference Hall Baltšiċa (09:00-11:00)

- Conveners: Prof. VANKOV, Ivan

9:00	Distributed control and monitoring tools at LU-20 and HILAC complexes	Mr. ELKIN, Vladimir
9:30	ATLAS Trigger and Data Acquisition Upgrades for the High Luminosity LHC	WAINER, Vandelli *on behalf of ATLAS Trigger-DAQ*
10:00	CMS High Level Trigger performance in Run 2	SERT, Hale
10:30	Detector performance and stability of the CMS RPC system during Run-2	Dr. HADJIISKA, Roumyana *on behalf of CMS collaboration*

Coffee break - Conference Bar (11:00-11:30)

Plenary - Conference Hall Baltšiċa (11:30-13:30)

- Conveners: Prof. BARBERIS, Dario

11:30	BM@N experiment for studies of baryonic matter at the Nuclotron	Mrs. MAKSYMCHUK, Anna *on behalf BM@N collaboration*
12:00	EI3 – The ATLAS EventIndex for LHC Run 3	Dr. PROKOSHIN, Fedor
12:30	Electronics upgrade for the CMS CSC muon system at the High Luminosity LHC	DE BRUYN, Isabelle
13:00	Case of Cloud Designing and Development	Mr. SHEVEL, Andrey

LUNCH - 13:30-15:00

Tuesday 1 October 2019

Round Table: CISCO - Conference Hall Crnojeviċa (9:00-13:30)

Discussing Practical Aspects of Implementing CISCO Technologies: Server, Storage, Networking, Private and Hybrid Cloud.

Coffee break - Conference Bar (11:00-11:30)

LUNCH - 13:30-15:00

Distributed Computing. GRID & Cloud Computing - Conference Hall Baltšiċa (15:00-16:00)

- Conveners: Dr. KRYUKOV, Alexander

15:00	Filling the Storage Performance Gap: Storage on-demand for Data-Intensive Workloads in Composable/Disaggergated Paradigm	SAPOZHKOV, Ivan RSC
15:20	CISCO Solutions for Private and Hybrid Clouds	LOGUNTSOV, Evgeny
15:40	Grid at JINR	Dr. STRIZH, Tatiana

Coffee break - Conference Bar (16:00-16:30)

Distributed Computing. GRID & Cloud Computing - - Conference Hall Baltšiċa (16:30-18:45)

- Conveners: Dr. STRIZH, Tatiana

16:30	Present status and main directions of the JINR cloud development	Dr. KUTOVSKIY, Nikolay
16:45	Improving Resource Usage in HPC Clouds	PETROV, Ivan
17:00	Cloud integration within DIRAC Interware	Mr. PELEVANYUK, Igor
17:15	Accelerating personal computations with HTCondor: generating large numbers of events with GENIE	Mr. BALASHOV, Nikita
17:30	Optimizing resource usage with HTCondor	Mr. VOKAC, Petr
17:45	Data processing and analysis for Baikal-GVD	Mr. AVRORIN, Alexander
18:00	Distributed data processing of COMPASS experiment	Mr. PETROSYAN, Artem
18:15	Multifunctional platform and mobile application for plant disease detection	Dr. UZHINSKIY, Alexander
18:30	Management of the environmental monitoring data: UNECE ICP Vegetation	Dr. UZHINSKIY, Alexander

Detector & Nuclear Electronics- Conference Hall Petroviċa (15:00-16:00)

- Conveners: Dr. HADJIISKA, Roumyana

15:00	Detector performance of the CMS Precision Proton Spectrometer during LHC Run2 and its upgrades for run3	FERRO, Fabrizio *On behalf of CMS collaboration*
15:15	Results of the Radiation Dose Study around the GEM Muon Detectors at CMS	Prof. VANKOV, Ivan
15:30	GEM detectors for the Upgrade of the CMS Muon Forward system	Dr. RESSEGOTTI, Martina *On behalf of CMS collaboration*
15:45	Control and monitoring of booster inflector plates power system	NAZLEV, Hristo

Coffee break - Conference Bar (16:00-16:30)
Detector & Nuclear Electronics- Conference Hall Petroviċa (16:30-19:00)

- Conveners: Dr. SIDORCHUK, Sergey

16:30	Simulation of spectra of cylindrical neutron counters using the GEANT-4 package	Mr. CHURAKOV, Andrey
16:45	Measurement of basic static characteristics (I-V, C-V) of silicon detectors	Ms. STRELETSKAYA, Catherine
17:00	Application of modern commercial digitizers for new approaches to neutron's detection	Mr. PONOMAREV, Dmitrii
17:15	Front-End Electronics for BM@N STS, characterization and quality	Mr. SHITENKOV, Mikhail
17:30	Experiments with GABRIELA detector system	Mrs. KUZNETSOVA, Alena
17:45	Calculation of efficiency of cylindrical thermal neutron counter assemblies	Dr. KURILKIN, Aleksey
18:00	New read-out electronics for the Drift-Tube Chambers of CMS	Dr. ELISEEV, Dmitry
18:15	Improvements in the NOvA Detector Simulation based on JINR stand measurements	SAMOYLOV, Oleg
18:30	Design of the front-end electronics based on multichannel IDEAS ASICs for silicon and GEM detectors	Ms. IVANOVA, Yulia
18:45	Intel FPGA products for data processing in complex computing environment	Mr. DOBROSOLETS, Konstantin

Wednesday 2 October 2019

Plenary - Conference Hall Baltšiċa (9:00-11:00)

- Conveners: LOKAJICEK, Milos

9:00	Third-Party-Copy transfer alternatives to GridFTP	Mr. VOKAC, Petr
9:30	PIK Data Centre status update	Mr. KIRYANOV, Andrey
10:00	Multifunctional Information and Computing Complex of JINR: status and perspectives	Dr. KORENKOV, Vladimir
10:30	New fast simulation in ATLAS	Dr. FAUCCI GIANNELLI, Michele *on behalf of the ATLAS collaboration*

Coffee break - Conference Bar (11:00-11:30)

Plenary - Conference Hall Baltšiċa (11:30-13:30)

- Conveners: Prof. DEGTYAREV, Alexander

11:30	JOIN² a publication database and repository based on Invenio	Mr. WAGNER, Alexander *on behalf of the JOIN2 project*
12:00	Benchmarking WLCG resources using HEP experiment workflows	VALASSI, Andrea *On behalf of the HEPiX CPU Benchmarking Working Group*
12:30	Towards Russian National Data Lake Prototype	Mr. KIRYANOV, Andrey
12:50	Dell EMC Ready Solutions for HPC	STEPANOV, Nikita *DELL*
13:10	The case for energy-efficient High Performance Computing	MOSKOVSKY, Alexander *RSC*

LUNCH - 13:30-15:00

EXCURSION

- Hotel - Kotor by bus with guide assistance
- City tour Kotor
- City tour Perast
- Boat Perast-Gospa-Perast
- Perast - Hotel Splendid

Wednesday 2 October 2019

Round Table NIAGARA - Conference Hall Crnojeviča (9:00-13:30)

09:00	Data Processing and Storage for Black Hole Event Horizon Imaging	GALLE, Martin
	DISCUSSION	

Coffee break - Conference Bar (11:00-11:30)

11:30	Why and how processor changing its microarchitecture. New supercomputers are different - why and how? Summit - first results	PEREVOZCHIKOV, Alexey
	DISCUSSION	

LUNCH - 13:30-15:00

EXCURSION

- Hotel - Kotor by bus with guide assistance
- City tour Kotor
- City tour Perast
- Boat Perast-Gospa-Perast
- Perast - Hotel Splendid

Thursday 3 October 2019

Detector & Nuclear Electronics - Conference Hall Baltšiċa (9:00-11:00)

- Conveners: Dr. GORBUNOV, Nikolay

9:00	Radiation Damage Studies of Silicon Photomultipliers in Neutrons Field of IBR-2	Dr. AFANASIEV, Sergei
9:15	Stand for the investigation radiation hardness of the plastic scintillators and reflectors	Dr. AFANASIEV, Sergei
9:30	The software and solutions for express processing of the raw list mode data measured on the neutron spectrometers of the IBR-2 reactor using a delay line position-sensitive detector as designed to be integrated into the experiment	Dr. LITVINENKO, Elena
9:45	ELECTRONICS OF STRAW TRACKERS IN NA62, NA64 AND SPD EXPERIMENTS	Mr. ENIK, Temur *on behalf of the NA62,*
10:00	Front-End Electronics for TPC/MPD detector of NICA project	Mr. VERESCHAGIN, Stepan
10:15	Current-Voltage Characteristics of Aluminium and Zinc Implanted Silicon for	Mr. OEBA, Duke
10:30	Trigger and beam monitoring system of BM@N and SRC experiments	Dr. SERGEEV, Sergey
10:45	Project of a fast interaction trigger for MPD experiment	Dr. SERGEEV, Sergey

Coffee break - Conference Bar (11:00-11:30)

Triggering, Data Acquisition, Control Systems - Conference Hall Baltšiċa (11:30-13:30)

- Conveners: Dr. STREKALOVSKY, Oleg

11:30	Particle detection system for SHE synthesis at DGFRS-II	Mr. SCHLATTAUER, Leo
11:45	CMS Drift Tubes at High-Luminosity LHC: chamber longevity and upgrade of the detector electronics	BATTILANA, Carlo *On behalf of CMS collaboration*
12:00	Design challenges of the CMS High Granularity Calorimeter Level 1 trigger	Dr. PALLADINO, Vito
12:15	Performance of the Pixel Luminosity Telescope for Luminosity Measurement at CMS during Run2	Mr. ROMEO, Francesco
12:30	Data Quality Monitoring for the CMS Cathode Strip Chambers: implementation, performance and operational experience	BARASHKO, Victor
12:45	Modernization of neutron Fourier chopper for High-resolution Fourier diffractometer (HRFD)	Mr. ZERNIN, Nikolay
13:00	Modernization of the Management and Control System for the Cold Neutron Moderator at the Fast Pulsed Reactor	Mr. ALTYNOV, Alexey
13:15	The New Data Acquisition System MPD-32 for the High-Resolution Fourier Diffractometer at the IBR-2 Pulsed Reactor	Mr. SHVETSOV, Vasilii

LUNCH - 13:30-15:00

Triggering, Data Acquisition, Control Systems - Conference Hall Baltšiċa (15:00-16:00)

- Conveners: Dr. KARJAVINE, Vladimir

15:00	Nano-metrology of macroscopic systems: Laser metrology laboratory, Precision laser inclinometer, Interferometric Length Gauge, data collection	Mr. BEDNYAKOV, Ivan

15:15	Electronics of the fission fragments spectrometer "COMETA-F"	Dr. STREKALOVSKY, Oleg
15:30	APPLICATION OF QUANTUM TECHNOLOGIES FOR THE DEVELOPMENT OF AN INTELLECTUAL CONTROL SYSTEM TO SETUP CURRENTS OF THE CORRECTIVE MAGNETS FOR THE BOOSTER SYNCHROTRON OF THE NICA FACILITY	Mr. MONAKHOV, Dmitrii
15:45	PROGRAM MANAGER FOR DC-280 CYCLOTRON CONTROL SYSTEM	Mrs. ZABANOVA, Veronika
16:00	The ATLAS Electron and Photon Trigger Performance in Run 2	Mr. MAXIMOV, Dmitriy *on behalf of ATLAS Trigger-DAQ*

Coffee break - Conference Bar (16:00-16:30)

Triggering, Data Acquisition, Control Systems - Conference Hall Baltšiċa (16:30-18:15)

- Conveners: Dr. GORBUNOV, Nikolay

16:30	The Joint Triggering and DAQ System of Experimental Complex NEVOD for Multicomponent Cosmic Ray Investigations	Dr. ZADEBA, Egor
16:45	ATLAS Muon Trigger performance	Dr. POLICICCHIO, Antonio *on behalf of ATLAS Trigger-DAQ*
17:00	The ATLAS Run-2 Trigger Menu	Dr. XIA, Ligang *on behalf of ATLAS Trigger-DAQ*
17:15	Implementation of the ATLAS trigger within the multi-threaded AthenaMT framework	BIELSKI, Rafal *on behalf of ATLAS Trigger-DAQ*
17:30	FELIX: commissioning the new detector interface for the ATLAS trigger and readout system	ILIC, Nicolina *on behalf of ATLAS Trigger-DAQ*
17:45	The automatic control system of 8th Phasotron tract	Mr. YUDIN, Andrey
18:00	Development of Web interactive 3D environment for event display in 'Muon g-2' (Fermilab) and 'MEG II' (PSI) experiments	Mr. KRYLOV, Viktor

Students school closing Conference Hall Baltšiċa (18:15 – 18:45)

CONFERENCE DINNER – Conference Hall Petroviċa (21:00-23:30)

Thursday 3 October 2019

<u>Machine Learning Algorithms and Big Data Analytics</u> Conference Hall Petroviċa (9:00-11:00)

- Conveners: Prof. OSOSKOV, Gennady

9:00	Structural approach to the deep learning method	Dr. KULYABOV, Dmitry
9:15	The use of CNN for image analysis from Cherenkov telescopes in the TAIGA experiment	Dr. KRYUKOV, Alexander
9:30	A study on performance assessment of essential clustering algorithms for the interactive visual analysis toolkit InVEx	TITOV, Mikhail
9:45	Identification of tau lepton using Deep Learning techniques at CMS	ANDROSOV, Konstantin
10:00	DijetGAN: A Generative-Adversarial Network Approach for the Simulation of QCD Dijet Events at the LHC	Dr. FAUCCI GIANNELLI, Michele
10:15	Anomaly detection and breakdown prediction in RF power source output: a review of approaches	Mr. DONON, Yann
10:30	Investigating new neural network methods for the NOvA experiment	Mr. KULLENBERG, Christopher
10:45	Tracking for BM@N GEM detector on the basis of graph neural network	Mr. SHCHAVELEV, Egor
11:00	The new machine learning approach for exclusion of afterpulses in drift chamber data	V.S. Vorobyev

<u>Coffee break</u> - Conference Bar (11:00-11:30)

<u>Machine Learning Algorithms and Big Data Analytics</u> - Conference Hall Petroviċa (11:30-13:30)

- Conveners: Dr.Zrelov, Petr

11:30	LOOT: Novel end-to-end trainable convolutional neural network for particle track reconstruction	Mr. GONCHAROV, Pavel
11:45	Global Neutrino Analysis framework and GPU based computations	Ms. FATKINA, Anna
12:00	Accelerating the particle-in-cell method of plasma and particle beam simulation using CUDA tools	Mr. KADOCHNIKOV, Ivan
12:15	Blocking strategies to accelerate record matching for Big Data integration	Mr. KADOCHNIKOV, Ivan
12:30	Big Data technologies for labour market analysis	BELOV, Sergey
12:45	DYNAMIC APACHE SPARK CLUSTER FOR ECONOMIC MODELING	Ms. GAVRILENKO, Iuliia
13:00	Simulating Lattice QCD on the "Govorun" Supercomputer	KOTOV, Andrey
13:15	Hit finder and track reconstruction algorithms in the Multi-Wire Proportional Chambers of BM@N experiment	Prof. NEMNYUGIN, Sergei

<u>LUNCH</u> - 13:30-15:00

<u>Research Data Infrastructures</u> - Conference Hall Petroviċa (15:00-16:00)

- Conveners: Dr. ILIIN, Viacheslav

15:00	Database ecosystem is the way to Data Lakes	Ms. SHCHEGOLEVA, Nadezhda
15:15	On Bandwidth on Demand Problem	STEPANOV, Evgeniy
15:30	Distributed Data Management System for LHAASO	Dr. LI, Haibo

| 15:45 | Federated storage initiatives at NRC "Kurchatov Institute" | Mr. KIRYANOV, Andrey |

Coffee break - Conference Bar (16:00-16:30)

Computations with Hybrid Systems (CPU, GPU, coprocessors) - Conference Hall Petroviċa (16:30-18:15)

- Conveners: Dr. PODGAINY, Dmitry

16:30	HybriLIT heterogeneous computing platform: new possibilities for NICA computing	Dr. PODGAINY, Dmitry
16:45	HPC Solutions for HEP applications at IHEP	Ms. DU, Ran
17:00	«Digital Lab» platform for intensive work with metadata in specialized scientific information systems	ENYAGINA, Irina
17:15	The system of automatically processing and analyzing neurobiological experimental data of the Kurchatov Institute Resource Center	ENYAGINA, Irina
17:30	Realtime remote rendering of GPGPU accelerated Schrödinger's Smoke	Mr. IAKUSHKIN, Oleg
17:45	Multiagent information technologies in system analysis	Ms. INKINA, Vera
18:00	Parallel Algorithms for investigation Josephson Junctions	Dr. STRELTSOVA, Oksana

Students school closing - Conference Hall Baltšiċa (18:15 – 18:45)

CONFERENCE DINNER - Conference Hall Petroviċa (21:00-23:30)

Friday 4 October 2019

<u>Innovative IT Education</u> - Conference Hall Petroviċa (9:00-11:00)

- Conveners: Dr.TOKAREVA, Nadezhda

9:00	Concept for the development of a digital platform for education at Dubna University	Prof. CHEREMISINA, Evgenia
9:15	Methodology and technology of e-learning at Dubna University	Dr. KREIDER, Oksana
9:30	Heterogeneous IT platform "HybriLIT" for organizing the educational process on the basis of the International IT School "Data Science"	Mrs. PRIAKHINA, Daria
9:45	Methodical aspects of training data scientists using the Data GRID in a virtual computer lab environment	Dr.TOKAREVA, Nadezhda
10:00	Information Security Issues in a Distributed Computing Educational Environment	Dr. TOKAREVA, Nadezhda
10:15	Virtual Laboratory – virtual educational tools and hands-on practicum	Mrs. KLYGINA, Kseniia
10:30	Elective course "Nuclear Physics" for high school students – synthesis of traditional textbook with the modern computer tools	Mrs. VORONTSOVA, Nataliya
10:45	JINR educational portal («edu.jinr.ru») — open educational resources and modern visualization tools for training of young professionals for research	Ms. BELAGA, Victoria

<u>Coffee break</u> - Conference Bar (11:00-11:30)

<u>Innovative IT Education</u> - Conference Hall Petroviċa (11:30-13:30)

- Conveners: Dr.TOKAREVA, Nadezhda

11:30	The features of the specialists training in electronics design «Megasaience»	Prof. SAKHAROV, Yuri
11:45	General Discussion	

<u>Closing</u> - Conference Hall Baltšiċa (13: 10-13:30)

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Friday 4 October 2019

Computing for Large Scale Facilities (LHC, FAIR, NICA, SKA, PIC, XFEL, ELI, etc.) – Conference Hall Baltšiċa (9:00-11:00)

- Conveners: Dr. ILIIN, Viacheslav

9:00	Automation of (big) data processing for scientific research in heterogeneous distributed computing systems. Lessons of BigPanDA project	Mr. OLEYNIK, Danila
9:15	Computing Resource Information Catalog: a unified information framework for LHC distributed computing and beyond	ANISENKOV, Alexey
9:30	AstroDS — distributed storage for large astroparticle physics facilities	Dr. KRYUKOV, Alexander
9:45	Realistic simulation of the MPD Time Projection Chamber with Garfield	Mr. BYCHKOV, Alexander
10:00	The Visualization Method Pipeline for the Application to Dynamic Data Analysis	Mr. GALKIN, Timofei
10:15	Containerized services for FEL data processing	Mr. TESLYUK, Anton
10:30	Hit Reconstruction Improvement in the Cathode Strip Chambers of the CMS Experiment	Mr. VOYTISHIN, Nikolay
10:45	Architecture of the computing system for experiments with large amount of data streams	Prof. DEGTYAREV, Alexander

Coffee break - Conference Bar (11:00-11:20)

Computing for Large Scale Facilities (LHC, FAIR, NICA, SKA, PIC, XFEL, ELI, etc.) - - Conference Hall Baltšiċa (11:20-13:05)

- Conveners: Dr. STRIZH, Tatiana

11:20	Critical exponents of directed percolation universal class: Three-loop approximation	Mr. MIZISIN, Lukas
11:35	System of safe data transmission from the she-factory dc-280	Mr. BAGINYAN, Andrey
11:50	Stress computation in a sphere with surface defects	Ms. SEDOVA, Olga
12:05	Zero-Knowledger Proof in Self-Sovereign Identity	Ms. KULABUKHOVA, Nataliia
12:20	Development and Integration of the Electronic Logbook for the BM@N experiment at NICA	Dr. GERTSENBERGER, Konstantin
12:35	Data Knowledge Base: metadata integration system for HENP experiments	Mrs. GOLOSOVA, Marina
12:50	Data streams processing in metadata integration system for HENP experiments	KAIDA, Anastasiia

Closing - Conference Hall Baltšiċa (13:10-13:30)