



**LXIX International Conference  
"Nucleus-2019"  
on Nuclear Spectroscopy  
and Nuclear Structure  
"Fundamental Problems of Nuclear Physics,  
Nuclei at Borders of Nucleon Stability,  
High Technologies"**

*Dedicated to the International Year  
of the Periodic Table of Chemical Elements*

**Dubna, Russia, 1–5 July 2019**

**Conference Program**

**Dubna**

**2019**

1 July

**1 July**

9:00 – 10:00 **REGISTRATION** (1st Floor)

10:00 **OPENING** (*Congress Hall, 4th Floor*)

**Plenary session**

10:00 – 11:30, 12:00 – 13:30 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Itkis M.G.	JINR: prospects of development	30
2	Oganessian Yu.Ts.	Present and future of superheavy element research	30
3	Kekelidze V.D.	Megascience project NICA	30

Coffee break 11:30 – 12:00

	Speaker	Title of report	Duration, min
1	Otsuka T.	Self-organization in nuclear structure and its impact to heavy nuclei	30
2	Karpov A.V.	Heavy-ion physics in JINR	30
3	Ter-Akopian G.M.	Radioactive ion beams (RIBs) for the study of heavy neutron-rich nuclei	30

Lunch 13:30 – 15:00

**Sections 1, 2, 3A, 3B, 5A**

15:00 – 16:40

Coffee break 16:40 – 17:10

**Sections 1, 2, 3A, 3B, 5A**

17:10 – 19:00

**WELCOME PARTY**

19:00 – 21:00

1 July

Section 1. **Experimental study of properties of atomic nuclei**

15:00 – 16:40, 17:10 – 18:45 (*Resident Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Voinov A.A.	The heaviest nuclei $^{294}\text{Ts}$ and $^{294}\text{Og}$ : experimental study and perspectives	20
2	Afonin A.A.	A coincident $^9\text{Be}(d,d'n)\text{X}$ experiment at deuteron energy of 15 MeV	15
3	Svirikhin A.I.	Spontaneous fission of $^{254,256}\text{Rf}$ and $^{250}\text{No}$ – new experimental data	15
4	Sukhovoij A.M.	The breaking thresholds of the Cooper pairs of nucleons in the $^{162,164}\text{Dy}$ nuclei	15
5	Bespalova O.V.	Evolution of the neutron single-particle structure of $N = 50$ isotones within the dispersive optical model	15

Coffee break 16:40 – 17:10

	Speaker	Title of report	Duration, min
1	Usmanov P.N.	Analysis of experimental data $^{158,160}\text{Gd}$ within the framework phenomenological model	15
2	Zalewski B.	Study of $^6\text{He} - d$ reactions at the ACCULINNA-2 separator	15
3	Leonova T.I.	Search for $^9\text{He}$ in stopped pion absorption by $^{14}\text{C}$	15
4	Chernyshev B.A.	Production of heavy helium isotope $^6\text{He}$ in stopped pion absorption	15

1 July

Section 2. **Experimental study of mechanisms of nuclear reactions**

15:00 – 16:40, 17:10 – 18:45 (*Innovation Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Sharma M.K.	A systematic study of pre-compound emission in light and heavy ion induced reactions at low energies	20
2	Melyan E.	Investigation of formation of residual nuclei from $^{209}\text{Bi}$ by reactions with 660 MeV protons and comparison with MCNP simulation results	15
3	Zaitsev A.A.	The Hoyle state in $^{12}\text{C}$ and $^{16}\text{O}$ dissociation	15
4	Vorobyev A.S.	Anisotropy of angular distributions of fission fragments from neutron-induced fission of $^{232}\text{Th}$ , $^{233}\text{U}$ , $^{235}\text{U}$ , $^{238}\text{U}$ , $^{239}\text{Pu}$ , $^{237}\text{Np}$ , $^{\text{nat}}\text{Pb}$ , and $^{209}\text{Bi}$ in intermediate energy range 1–200 MeV	15
5	Dzhilavyan L.Z.	Delayed neutrons from photofission of $^{238}\text{U}$ at $E_{\gamma \text{ max}} \approx 10$ MeV in different time intervals after irradiation	15

Coffee break 16:40 – 17:10

	Speaker	Title of report	Duration, min
1	Itkis I.M.	Fission and quasifission in the reactions with well-deformed nuclei	20
2	Berikov D.B.	Measurement of the ROT-effect in fission of $^{235}\text{U}$ induced by monochromatic cold polarized neutrons with an energy of 60 MeV	15
3	Bezbakh A.A.	Study of $^{10}\text{Li}$ low energy spectrum in the $^2\text{H}(^9\text{Li},p)$ reaction at the ACCULINNA-2 fragment separator	15
4	Gazeeva E.M.	Correlation study of $^7\text{He}$ spectrum from $^2\text{H}(^6\text{He},p)$ reaction	15
5	Kuznetsova A.	Experiments with GABRIELA detector system on SHELS	15

1 July

Section 3A. **Theory of atomic nucleus**

15:00 – 16:20, 17:10 – 18:45 (*Dialogue Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Erdoğan M.	Skyrme energy density functional for nuclear matter: relation between incompressibility and effective mass	20
2	Borzov I.N.	Joint report: 1. Fission barriers in actinide region within the Fayans energy-density functional 2. The Fayans energy-density functional and charge radii of very neutron-rich K isotopes	20
3	Rogov I.S.	Dinuclear system model in spontaneous fission process	15
4	Efimov A.D.	Deformation energy in Ba-even isotopes calculated with the microscopical IBM1	15

Coffee break 16:40 – 17:10

	Speaker	Title of report	Duration, min
1	Mishev S.	Transition densities and radii in odd-A nuclei	15
2	Vlasnikov A.K.	Smoothness of mass surface of odd nuclei and pairing energies	20
3	Lyubashevsky D.E.	Virtuality of the double beta decay of nuclei	15
4	Vladimirova E.V.	Local mass relations for binding energies evaluation	15
5	Boboshin I.	A new kind of atomic nuclei: local magic nuclei	15

1 July

**Section 3B. Theory of fundamental interactions, few- and many-body systems**

15:00 – 16:40, 17:10 – 18:45 (*Talks-1* Room, 2nd Floor)

	Speaker	Title of report	Duration, min
1	Musulmanbekov G.	Hadrons in a dense and hot baryonic matter	20
2	Shebeko A.V.	Relativistic nuclear calculations in the clothed-particle representation	20
3	Romanov Yu.I.	Interconversions of leptons in nondiagonal processes	15
4	Demidov Yu.A.	Magnetic hyperfine anomalies for nuclear physics	15
5	Popov Yu.V.	Faddeev's perturbation series for ionization amplitude of atom by strong laser pulse	15

Coffee break 16:40 – 17:10

	Speaker	Title of report	Duration, min
1	Kolganova E.A.	Weakly bound triatomic He <sub>2</sub> Li molecules	15
2	Roudnev V.	Phillips lines for weakly bound triatomic He <sub>2</sub> Li molecules	15
3	Korobitsin A.A.	The properties of <sup>4</sup> He three-atomic clusters	15
4	Yakovlev S.L.	Asymptotic form of the wave function of few-particles in the continuum	15
5	Motovilov A.K.	Equivalence between the complex rotation resonances and scattering matrix resonances	15

1 July

Section 5A. **Application of nuclear physics methods**

15:00 – 16:40, 17:10 – 18:45 (VIP-1 Room, 4th Floor)

	Speaker	Title of report	Duration, min
1	Eke C.	Calculation of self-absorption correction factor of some chemical fertilizers in the energy range from 80 to 1332 keV	15
2	Sękowski P.	Proton beam induced radioactivity of human-like tissues	15
3	Vakhtel V.M.	Distribution of empirical distributions of radiation flux particle counts	15
4	Tyutyunnikov S.I.	Experimental background of a large uranium target (a quasiinfinite target $^{238}\text{U}$ ) on proton beam	15
5	Khushvaktov J.	About modeling of $^{\text{nat}}\text{U} + \text{Th}$ neutron source on the basis of D + T neutron generator	15

Coffee break 16:40 – 17:10

	Speaker	Title of report	Duration, min
1	Scavarda L.	The FOOT experiment: measuring proton and light nuclei fragmentation cross sections up to 700 MeV/A	15
2	Cheng W.	Theoretical calculations of H irradiated tantalum phosphide	15
3	Shafeev G.A.	Decay of $^{152}\text{Eu}$ and $^{239}\text{Np}$ in the process of microwave and laser irradiation	15
4	Temerbulatova N.T.	Preparation of the Sn(60%)Pb(40%) solder on the basis of archaeological lead	15
5	Zinicoscaia I.	Study of metal removal from copper-containing effluents using AAS and NAA techniques	15

2 July

**2 July**

**Plenary session**

9:30 – 11:10 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Yeremin A.V.	Spectroscopy of the isotopes of transfermium elements in Dubna: present status and perspectives	30
2	Egorov V.G.	Search for sterile neutrino in reactor experiments (status and perspectives)	30
3	Goldberg V.Z.	New era of resonance reaction studies	30

Coffee break 11:10 – 11:50

**Sections 1, 2, 3A, 3B, 4, 5A**

11:50 – 13:30

Lunch 13:30 – 15:00

**Sections 1, 2, 3A, 4**

15:00 – 16:40

Coffee break 16:40 – 17:10

**Poster session**

17:10 – 19:00



2 July

Section 1. **Experimental study of properties of atomic nuclei**

11:50 – 13:30, 15:00 – 16:40 (*Resident Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Testov D.	Examination of beta-delayed neutron emission phenomena in very neutron rich isotopes	20
2	Inoyatov A.Kh.	Joint report: 1. Improved characteristics of the 15.1 keV M1 + E2 nuclear transition in $^{227}\text{Th}$ 2. Investigation of the 24.3 keV M1 + E2 nuclear transition in $^{227}\text{Th}$ by the conversion electron spectroscopy	20
3	Strekalovsky A.O.	Fission fragments binary break-up at crossing of metal foils	15
4	Titov O.A.	Recoil force from neutrino radiation in electron-capture decay as a probe of Lorentz invariance, nuclear and atomic structure	15
5	Stegailov V.I.	The $^{157}\text{Yb}$ decay	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Das P.	Spectroscopy of $^{128}\text{I}$ using ICF reaction	20
2	Starastin V.I.	The properties of $^{12}\text{C}$ states at high excitation energies	15
3	Demyanova A.S.	New directions in the study of nucleon halos	15
4	Danilov A.N.	Isobar analog states in $^{12}\text{B}$ and $^{12}\text{N}$ : search for states with enhanced radii	15
5	Muzalevskii I.A.	Search for $^7\text{H}$ at ACCULINNA-2	20

Coffee break 16:40 – 17:10

2 July

**Section 2. Experimental study of mechanisms of nuclear reactions**

11:50 – 13:30, 15:00 – 16:40 (*Innovation Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Singh B.P.	A study of incomplete fusion in heavy ion reactions at low energies	20
2	Kopatch Yu.N.	Measurements of gamma-ray yields and angular correlations from reactions induced by 14.1 MeV neutrons using tagged neutron method	15
3	Kumar D.	Probing the asymmetric fission of sub-lead nuclei at energies above Coulomb barrier	15
4	Okubayashi M.	Fission of $^{258}\text{Md}$ using $^4\text{He} + ^{254}\text{Es}$ reaction	20

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Skobelev N.K.	Charge-exchange reactions on low-energy beams of heavy ions	20
2	Konobeevski E.S.	Preliminary data on $nn$ -scattering length in $nd \rightarrow pnn$ reaction at neutron energy of 50–80 MeV	15
3	Lukyanov S.M.	Multinucleon transfer in reaction $^{18}\text{O}(10 \text{ MeV}/A) + \text{Ta}$	20
4	Issatayev T.	Break-up reactions of $^6\text{Li}$ , $^7\text{Be}$ , and $^8\text{B}$	15
5	Mendibayev K.	Experimental study of cluster structure of $^9\text{Be}$ nuclei in the mechanism of their interaction	15

Coffee break 16:40 – 17:10

2 July

Section 3A. **Theory of atomic nucleus**

11:50 – 13:30, 15:00 – 16:40 (*Dialogue Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Frosini M.	High-order Bogoliubov many-body perturbation theory for open-shell nuclei	15
2	Drumev K.P.	Symmetries of the nuclear shells in the nuclear shell-model approach	20
3	Dalal R.	SRC based model for the nuclear structure	20
4	Moumene I.	Bohr Hamiltonian with Pöschl–Teller potential for gamma-unstable and axially symmetric prolate deformed nuclei	15
5	Bezbakh A.N.	Level densities of nuclei with $Z = 112-120$	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Izosimov I.N.	Structure of $\beta$ -decay strength function $S_{\beta}(E)$ , SU(4) region and quenching of axial-vector weak interaction constant in halo nuclei	20
2	Monakhov V.V.	Dirac gamma matrices constructed from operators of creation and annihilation as the cause of electroweak interaction	15
3	Rukhadze E.N.	Search for $\beta^+EC$ and ECEC processes in $^{74}Se$	15
4	Severyukhin A.P.	Two-phonon structures of beta-decay rates	15
5	Sidorov S.V.	Skyrme-TQRPA calculations of electron capture and beta-decay rates at presupernova conditions	15

Coffee break 16:40 – 17:10

2 July

**Section 3B. Theory of fundamental interactions, few- and many-body systems**

11:50 – 13:30 (*Talks-1* Room, 2nd Floor)

	Speaker	Title of report	Duration, min
1	Filippov G.M.	Features of interaction of a projectile with a solid	15
2	Kravchenko M.O.	Coherent states formalism for describing statistical processes in a nuclear reactor	15
3	Suchkov D.A.	Applications of the Vlasov equation to dissipative systems	15
4	Krassovitskiy P.M.	Model of three-dimension scattering for nuclear and molecular application	15
5	Mayburov S.	Joint report: 1. Nucleus decay parameter oscillations as possible signal of quantum mechanics nonlinearity 2. Search for periodical variations of Fe-55 isotope weak decay parameters	20
6	Malykh A.V.	On the spectrum of three-body states in the one-dimensional harmonic trap	10

Lunch 13:30 – 15:00

2 July

Section 4. **Theory of nuclear reactions**

11:50 – 13:30, 15:00 – 16:40 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Vitturi A.	The algebraic molecular model in $^{12}\text{C}$ and its application to the alpha + $^{12}\text{C}$ scattering: from densities and transition densities to optical potentials, nuclear form factors, and cross sections	20
2	Maridi H.M	Energy dependence and surface contribution of the nucleon-nucleus optical potential	15
3	Klimochkina A.A.	Dispersive optical model potentials for a description of $(d,p)$ transfer reactions	15
4	Denikin A.S.	Search for $^4\text{He}$ global optical potential at low collision energies	15
5	Oprea C.	Joint report: 1. Nuclear reaction mechanisms of $^{143}\text{Nd} (n_{\text{fast}}, \alpha)^{140}\text{Ce}$ 2. Fast proton induced reactions on natural In	20

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Titova L.V.	True ternary fission as virtual process	20
2	Barabanov A.L.	Theoretical analysis of the experimental data on fragment angular anisotropy for neutron-induced fission at energies up to 200 MeV	20
3	Onegin M.S.	Calculation of fragment angular distribution in under threshold fission of $^{234}\text{U}$ by neutrons	15
4	Sukhareva O.M.	Studies of validity of quasiclassical approach to three-body decays	15
5	Stopani K.A.	Calculation of photonuclear cross sections using the CMPR model	15

Coffee break 16:40 – 17:10

2 July

Section 5A. **Application of nuclear physics methods**

11:50 – 13:30 (*VIP-1* Room, 4th Floor)

	Speaker	Title of report	Duration, min
1	Chechenin N.G.	Cosmic proton induced nuclear fragmentation effects on spacecraft electronics	20
2	Bykhalo G.I.	Reactions on W with outgoing neutrons: experimental verification of GEANT4 Monte-Carlo simulation	20
3	Abdullaeva G.A.	Investigation of gadolinium accumulation in human brain glial tumors for GdNCT	20

Lunch 13:30 – 15:00

2 July

**Poster session**

17:10 – 19:00 (4th Floor)

**Poster section 1. Experimental study of properties of atomic nuclei**

	Presenter	Title of poster	Number
1.1	Dadwal A.	The effect of pairing correlations and deformation in flat superdeformed band	1
1.2	Dyachkov V.V.	Mechanisms of formation of modulation effects in elastic diffraction scattering of charged particles	2
1.3	Dyachkov V.V.	Dependence of deformation of exotic nuclei from the half-life	3
1.4	Dyachkov V.V.	New method of experimental detection and study of multi-neutrons	4
1.5	Karday M.	Test for validity of rotational energy formulae for SD bands in $A \sim 190$ mass region	5
1.6	Kulikov I.	Recent technical developments at the ISOLTRAP mass spectrometer to reach more exotic nuclides	6
1.7	Lamani U.	Lifetimes of quasi-particle bands in $^{129}\text{Cs}$	7
1.8	Simonov M.V.	Predictions of $\alpha$ -decay energies and half-lives for superheavy nuclides	8
1.9	Soroko Z.N.	Global analysis of nuclear data collected in PNPI	9
1.10	Tezekbayeva M.S.	Detailed study of Rf and No isotopes radioactive decay properties	10

**Poster section 2. Experimental study of mechanisms of nuclear reactions**

	Presenter	Title of poster	Number
2.1	Abdullaeva G.A.	Total neutron cross section measurements at the energy $E_n = 14.1$ MeV for $^{12}\text{C}$ , $^{19}\text{F}$ , $^{32}\text{S}$ , $^{115}\text{In}$ , $^{128}\text{Te}$ , $^{208}\text{Pb}$	11
2.2	Baginyan A.S.	System of safe data transmission from the SHE-factory DC-280	12
2.3	Erdemchimeg B.	Total reaction cross sections of light nuclei measured by the COMBAS fragment-separator	13
2.4	Fedorov N.A.	Improvement of the data processing technique in TANGRA setup	14
2.5	Generalov L.N.	Measurement of $^{6,7}\text{Li} + d$ and $^9\text{Be} + d$ reactions cross-sections	15

2.6	Generalov L.N.	Total cross-sections of $^{12}\text{C}(d,n)^{13}\text{N}$ , $^{14}\text{N}(d,n)^{15}\text{O}$ , $^{14}\text{N}[(d,t) + (d,d+n)]^{13}\text{N}$ , $^{14}\text{N}(d,n+\alpha)^{11}\text{C}$ , $^{16}\text{O}(d,n)^{17}\text{F}$ reactions	16
2.7	Kasparov A.A.	A possibility of determining cluster structure of excited states of $^9\text{Be}$ in $^9\text{Be}(d,d'n)X$ and $^9\text{Be}(d,d'\alpha)X$ reactions	17
2.8	Kravchenko M.O.	Neutron-physical characteristics evaluation of the subcritical assembly "Yalina-Thermal" with low enrichment uranium fuel	18
2.9	Makarov A.A.	Particle passage simulation through zero degree calorimeter of BM@N experiment using the BmnRoot package	19
2.10	Potashev S.I.	Study of neutron spatial distribution from source on base of LUE-8 electron accelerator with $^3\text{He}$ - and $^{10}\text{B}$ -detectors	20
2.11	Nauruzbayev D.K.	Strong resonances at high excitation energy in $^{17}\text{O} + \alpha$ resonance scattering	21
2.12	Novikov K.V.	Formation and decay of the composite system $Z = 120$ in reactions with heavy ions at energies near the Coulomb barrier	22
2.13	Petrovski A.M.	Computational study of high nuclear fuel burnup radiotoxicity for WWER-1200 reactor	23
2.14	Pikulina G.N.	Processing of reactions numeric information on nuclear reactions for EXFOR international library of experimental nuclear data	24
2.15	Ryzhkov S.V.	Simulation study of the external magnetic field influence on fusion plasma	25
2.16	Shcherbakov O.A.	Investigations of the $(n,\gamma f)$ - reaction as a method to study properties of transitions between highly excited states in heavy nuclei	26
2.17	Skorkin V.M.	Intermediate structure of fast neutron scattering by Se isotopes	27
2.18	Taova S.M.	Evaluated integral cross section of the $^3\text{He}(^3\text{He},2p)^4\text{He}$ reaction obtained with regard to electron screening	28
2.19	Urazbekov B.A.	Investigation of the cluster structure of $^9\text{Be}$ by reactions with a deuteron beam	29



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Poster section 3A. **Theory of atomic nucleus**

	Presenter	Title of poster	Number
3A.1	Galanina L.I.	Modern methods for determining the sizes of neutron-excess nuclei	30
3A.2	Benrachi F.	Nuclear structure calculations of nuclei below $N = 126$	31
3A.3	Isakov V.I.	Beta-decay of $^{134}\text{In}$ and properties of odd-odd neutron excess In isotopes at $N \geq 81$	32
3A.4	Laouet N.	$A = 101$ isobars nuclear structure properties near $rp$ -process path	33
3A.5	Manisa K.	Density dependence of nuclear matter symmetry energy	34
3A.6	Oudih M.R.	Number-projected spectroscopic factor of one-neutron pick-up reactions, in the isovector pairing case, in $N \approx Z$ nuclei	35
3A.7	Panov I.V.	$\beta$ -decay rates of heavy neutron-rich nuclei and the $r$ -process	36
3A.8	Saifi H.	Nuclear structure of even-even Zn, Ge, Se, Kr, and Sr isotopes around $^{78}\text{Ni}$	37
3A.9	Sitdikov A.S.	Topological phase and topological sectors	38
3A.10	Samarin V.V.	Study of ground states of $^{6,7,9,10}\text{Be}$ nuclei by Feynman's continual integrals method	39
3A.11	Tarasov V.N.	Investigation of the properties of nuclei with extremal neutron excess in the neighborhood of neutron magic number $N = 184$	40

Poster section 3B. **Theory of fundamental interactions, few- and many-body systems**

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3B.3	Prosnyak S.D.	Bohr–Weisskopf effect in the thallium atom	43
3B.4	Sadovnikova V.A.	The influence of the isoscalar quasiparticle interaction on zero-sound excitations	44
3B.5	Sadovnikova V.A.	Binding energy of nuclear matter in terms of QCD condensates	45
3B.6	Safin M.Ya.	On the coherent elastic scattering of polarized leptons by half-integer spin nuclei	46
3B.7	Safin M.Ya.	Phenomenological structure of the lepton currents and polarized muon decay	47

3B.8	Vinitsky S.I.	Coulomb scattering with transversal confinement	48
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Poster section 4. **Theory of nuclear reactions**

	Presenter	Title of poster	Number
4.1	Kabatayeva R.S.	Study of cluster structure of $^{11}\text{B}$ nucleus	49
4.2	Kabatayeva R.S.	Cluster structure of $^{10}\text{B}$ nucleus levels	50
4.3	Kondratyev V.N.	Magnetic and thermal effects in neutrino scattering in hot and dense nuclear matter	51
4.4	Mitcuk V.V.	A study of $pp$ -correlations in $d + ^1\text{H} \rightarrow p + p + n$ reaction	52
4.5	Oudih M.R.	Theoretical study of proton radioactivity	53
4.6	Selyankina S.M.	$R$ -matrix analysis of reactions with excitation of $^{10}\text{B}$ compound nucleus at 6–18 MeV energy	54

Poster section 5A. **Application of nuclear physics methods**

	Presenter	Title of poster	Number
5A.1	Dadakhanov J.A.	$^{228}\text{Ra} - ^{228}\text{Ac} - ^{228}\text{Th}$ radionuclide generator based on a reverse-tandem separation scheme	55
5A.2	Ershov K.V.	Comparison of the neutron flux performed by PhiTs and the experimentally obtained fluxes measured by $^3\text{He}$ -gaseous proportional detectors	56
5A.3	Kozhemyakin V.A.	Modern aero-gamma survey facilities and validation of received data	57
5A.4	Komar D.I.	Dosimetric measurements in capture gamma radiation field with energies up to 10 MeV	58
5A.5	Kurakina E.S.	Electron capture after-effects in complexes of $^{111}\text{In}$ and $^{152}\text{Eu}$ investigated by perturbed angular correlation	59
5A.6	Mirzayev N.A.	Low radioactive $\text{NH}_4\text{Cl}$ flux	60
5A.7	Nakin A.V.	GEANT4 simulations of the high-energy neutron beam of GNEIS ToF-facility	61
5A.8	Nuruyev S.M.	Thermogravimetric analysis of P(VDF-TeFE)/nano-Si composites with gamma radiation	62
5A.9	Nikolaeva N.A.	The current state and directions of further development of high-tech methods of radiation sterilization	63

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5A.10	Verhusha Y.A.	Gamma-radiation detection unit based on SrI <sub>2</sub> (Eu) crystal	64
5A.11	Vorobyev A.S.	Neutron testing facility for radiation hardness studies of electronic components at the SC-1000 synchrocyclotron in NRC KI – PNPI	65

Poster section 5B. **Technics and methods of experiment**

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5B.2	Goryainova Z.I.	Data processing in the time-of-flight mass-spectrometry of heavy ions	67
5B.3	Hrubčín L.	SiC nuclear radiation detectors	68
5B.4	Karaevsky S.Kh.	Data correction method for improving spatial resolution of neutron positional sensitive <sup>10</sup> B-detector	69
5B.5	Pikulina G.N.	Automated systems to register fluence of neutrons with energies higher than 0.1 MeV in real time scale for radiation resistance testing	70
5B.6	Suleymanli B.D.	Superconducting tunnel junctions as detectors in nuclear and particle physics	71
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3 July

**3 July**

**Plenary session**

9:30 – 11:10 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Shlomo S.	Giant resonances in $^{40,48}\text{Ca}$ , $^{68}\text{Ni}$ , $^{90}\text{Zr}$ , $^{116}\text{Sn}$ , $^{144}\text{Sm}$ and $^{208}\text{Pb}$ and properties of nuclear matter	30
2	Frontasyeva M.V.	State-of-the-art of neutron activation analysis at FLNP JINR	30
3	Chernyaev A.P.	Prospects of application of modern technologies of nuclear physics in medicine	30

Coffee break 11:10 – 11:50

**Sections 2, 3A, 4, 5B**

11:50 – 13:30

Lunch 13:30 – 15:00

**Sections 2, 3A, 4, 5B**

15:00 – 16:40

Coffee break 16:40 – 17:10

**Sections 2, 3A, 4, 5B**

17:10 – 19:00

3 July

Section 2. **Experimental study of mechanisms of nuclear reactions**

11:50 – 13:30, 15:00 – 16:40, 17:10 – 19:00 (*Innovation Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Janseitov D.M.	Study elastic scattering of deuterons from $^{13}\text{C}$ nuclei with optical and folding models	20
2	Sakuta S.B.	Scattering of $\alpha$ -particles by $^{11}\text{B}$ nuclei at an energy of 40 MeV and role of the exchange mechanism with transfer of $^7\text{Li}$	20
3	Nurmukhanbetova A.K.	First observation of $^{21}\text{Ne}$ structure in the $^{17}\text{O}(\alpha,\alpha)$ resonance reaction	15
4	Serikov A.	An effective method of excitation function measurements for $(\alpha,n)$ reactions at low energies	15
5	Barbarian V.A.	The precision of the calculation of the neutron and gamma yields as a result of $(\alpha,n)$ reactions for low-background experiments	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Pyatkov Yu.V.	Updated version of the collinear cluster tri-partition scenario	20
4	Kamanin D.V.	True quaternary fission – confirmation from $^{235}\text{U}(n_{\text{th}}, f)$ reaction	15
3	Sobolev Yu.G.	Energy dependence of total reaction cross sections for $^6,8\text{He}$ , $^8,9\text{Li}$ beam particles on $^{28}\text{Si}$ , $^{59}\text{Co}$ , $^{181}\text{Ta}$ targets	15
4	Solodukhov G.V.	On the total photoabsorption cross sections. Measurement near particle threshold	15
5	Chuvilskaya T.V.	Codes descriptive of nuclear reactions and isomeric cross section ratios data	15

Coffee break 16:40 – 17:10

3 July

	Speaker	Title of report	Duration, min
1	Novoselov A.S.	Production of radon isotopes in the reaction $^{40}\text{Ar} + ^{232}\text{Th}$ at mass separator MASHA	15
2	Vedeneev V.Yu.	Experimental study of ECR ion source parameters using short pulse injections of Hg and noble gases leakages at MASHA setup	15
3	Potashev S.I.	Identification and energy measuring of charged particles using ionization loss in multiple layer gaseous detector	15
4	Shevchik E.A.	Upgrade of the GERDA Phase II experiment	15
5	Golubenko A.A.	Data on the nucleon structure from the reaction of electron scattering off protons	15
6	Botvina A.S.	Production mechanisms for exotic- and hyper-nuclear clusters in relativistic ion collisions	15

3 July

Section 3A. **Theory of atomic nucleus**

11:50 – 13:30, 15:00 – 16:40, 17:10 – 18:20 (*Dialogue Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Karpeshin F.F.	Joint report: 1. Bohr–Weisskopf effect and hyperfine magnetic anomalies in the atomic spectra 2. NEEC and NEECxe nuclear excitation as an extension of the di-electronic recombination	20
2	Koltsov V.V.	Joint report: 1. Search for de-excitation of nuclear isomers $^{186m}\text{Re}$ and $^{110m}\text{Ag}$ in plasma of high-power picoseconds laser pulse 2. On resonant influence of matrix with isomeric nuclei on isomeric transition probability 3. On excitation of nuclear transitions in plasma under its irradiation with resonant photons	20
3	Ganev H.G.	Microscopic description of negative parity states in $^{154}\text{Sm}$	15
4	Oprea A.I.	Spatial symmetry breaking effects in slow neutrons interactions with lead nucleus	15
5	Egorov M.V.	Neutron-nucleus and meson-nucleus reactions on lithium in the three-body approach	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Arsenyev N.N.	Microscopic description of pygmy and giant dipole resonances in $^{48,50}\text{Ca}$ and $^{68,70}\text{Ni}$	20
2	Kolomiytsev G.V.	Damping parameters of high-energy charge-exchange spin-monopole excitations: a semi-microscopic description	20
3	Mardyban E.V.	Phase transitions in alternating parity bands of heavy nuclei within the framework of collective model	15

3 July

4	Nazmitdinov R.G.	Spreading widths of giant dipole resonances in the lead region	20
5	Gorelik M.L.	Description of isoscalar multipole giant resonances within the particle-hole dispersive optical model	15

Coffee break 16:40 – 17:10

	Speaker	Title of report	Duration, min
1	Georgieva A.I.	Dynamical symmetries in shell and collective models of the nuclear structure	20
2	Baktybayev K.	Generalized quasispin formalism and fermion structure of the collective states of nuclei	20
3	Mazur A.I.	Resonant states in elastic scattering of nucleons by helium isotopes within the No-Core Shell Model	20



3 July

Section 4. **Theory of nuclear reactions**

11:50 – 13:30, 15:00 – 16:40, 17:10 – 19:00 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Amano S.	Fusion process in transfer reactions with Langevin calculation	20
2	Nasirov A.K.	The hindrance to complete fusion of nuclei related with the nucleon transfer mechanism	20
3	Saiko V.V.	Mechanism of $N/Z$ equilibration in $^{58}\text{Ni}$ , $^{40}\text{Ca} + ^{208}\text{Pb}$ reactions at near-barrier energies	15
4	Zhang G.	Production of heavy and super-heavy nuclei by multi-nucleon transfer reaction	15
5	Kalandarov Sh.A.	Transfer products accompanying complete fusion	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Sharma M.K.	Analysis of various decay modes of radioactive nucleus $^{242}\text{Cm}$	15
2	Khuyagbaatar J.	Survivability of compound nuclei formed in $^{48}\text{Ca}$ and $^{50}\text{Ti}$ induced reactions with $^{176}\text{Yb}$	15
3	Wen P.W.	Application of the finite element method in the coupled-channels calculations for heavy-ion fusion reactions	15
4	Chushnyakova M.V.	Heavy-ion double-folding interaction barriers with the relativistic mean field nuclear matter densities	15
5	Khmyrova N.A.	Impact of $NN$ -forces on the characteristics of heavy-ion collision barrier	15

Coffee break 16:40 – 17:10

3 July

	Speaker	Title of report	Duration, min
1	Buyukcizmeci N.	Multifragmentation leading to production of nuclei and hypernuclei	20
2	Kireyeu V.	The PHQMD model for the formation of nuclear clusters and hypernuclei in heavy-ion collisions	15
3	Zelenskaya N.S.	The spectroscopic amplitudes in the $^{27}\text{Al} \rightarrow t + ^{24}\text{Mg}$ and $^{28}\text{Si} \rightarrow p + ^{27}\text{Al}$ disintegration vertexes	20
4	Kadmensky S.G.	Joint report: 1. Null-test for time-reversal invariance in binary nuclear reaction with spin-oriented particles 2. The $T$ -invariance conditions for differential sections of binary nuclear reactions with participation of spin-oriented nuclei and particles	20

3 July

**Section 5B. Technics and methods of experiment**

11:50 – 13:30, 15:00 – 16:40, 17:10 – 19:00 (*Resident Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Bezbakh A.A.	Detector array for the low-energy fission study	15
2	Chernysheva E.V.	Efficiency of solid ISOL method for fusion-evaporation reactions	15
3	Lifanov M.N.	Investigation of anti-radiation materials and personal protective equipment with new multi-chamber electron detector	15
4	Nemchenok I.B.	Lithium-loaded plastic scintillators	15
5	Dzhilavyan L.Z.	Conversion of ultrarelativistic electrons to positrons in thick targets	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Lazareva T.V.	Upgrade of the ALICE inner tracking system	15
2	Ovsyannikov V.P.	Main magnetic focus ion source: device with high electron current density	15
3	Stukalov S.S.	“MULTI” set-up for spectroscopy nuclear reactions	10
4	Siváček I.	$4\pi$ $\gamma$ -spectrometer for total reaction cross section measurement	10
5	Barinova S.	Development of time-of-flight system for automatic measuring projectile energy for separator DGFRS-2 employing NI LabVIEW	15
6	Bredikhin I.S.	Digital systems for multi-parametric analysis in physics applications	15

Coffee break 16:40 – 17:10

3 July

	Speaker	Title of report	Duration, min
1	Inoyatov A.Kh.	Low-energy nuclear electron spectrometry and its application in the KATRIN neutrino project	15
2	Zuyev S.V.	Studying the distribution of thermal neutrons from the neutron channel of the W-Be photoneutron source of INR RAS	15
3	Zarubin P.I.	Nuclear emulsion in low energy studies	15
4	Avdeyev S.P.	Source velocity in collisions of 3.6 GeV protons with gold target	15
5	Samedov V.V.	Covariance between signals of photodetectors and spectrometric characteristics of scintillation spectrometer	15
6	Ponomarev D.	Modern neutron detectors based on inorganic scintillators and their applicability for low neutron flux measurements	15

4 July

**4 July**

**Plenary session**

9:30 – 11:10 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Aritomo Y.	Estimation of synthesizing new superheavy elements using dynamical model	20
2	Blokhintsev L.D.	Asymptotic normalization coefficients, analytic continuation of scattering data, and astrophysics	20
3	Kadmensky S.G.	The new class of the nuclear decays and reactions with participation of the virtual states of intermediate nuclei	20
4	Shirokov A.M.	<i>Ab initio</i> calculations of light nuclei within the No-Core Shell Model	20

Coffee break 11:10 – 11:50

**Sections 2, 3A, 4**

11:50 – 13:30

Lunch 13:30 – 15:00

**Sections 2, 3A, 4**

15:00 – 16:40

Coffee break 16:40 – 17:10

**Sections 2, 3A, 4**

17:10 – 19:00

4 July

Section 2. **Experimental study of mechanisms of nuclear reactions**  
11:50 – 13:30, 15:00 – 16:40, 17:10 – 19:00 (*Innovation Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Artemenkov D.A.	Dissociation features of relativistic $^{10}\text{C}$ nuclei in nuclear track emulsions	15
2	Borisov V.S.	$K^*(892)$ meson measurements in Cu + Au collisions at 200 GeV	15
3	Kolesnikov V.I.	Prospects for the study hyperons and hypernuclei at the NICA collider	15
4	Kulikov V.V.	Pions and light fragments in $^{12}\text{C}$ fragmentation at 2 GeV/nucleon	15
5	Larionova D.M.	Phi meson measurements in $p + \text{Au}$ and $\text{He} + \text{Au}$ collisions at 200 GeV	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Fazliakhmetov A.	Neutrino interaction with the Ga-Ge system and nuclear resonances	15
2	Semenov S.V.	Cross section of neutrino absorption by gallium-71 nuclei	15
3	Shitov Yu.A.	The final results of the NEMO-3 experiment and status of the SuperNEMO project	20
4	Petrovski A.M.	Neutron radiation calculation for stationary campaigns of WWER-1200 reactors	15
5	Skorkin V.M.	Two-phonon coupled-channel analysis of the spin dependence of $p$ -wave neutron scattering by spherical nuclei	15

Coffee break 16:40 – 17:10

4 July

	Speaker	Title of report	Duration, min
1	Plotnikov V.A.	The BM@N experiment for studies of baryonic matter at the Nuclotron	20
2	Terekhin A.A.	Study of the differential cross section of the deuteron-proton elastic scattering at 1–2 GeV	15
3	Ryabov Yu.G.	Study of the short-lived resonance production and reconstruction with the MPD experiment at NICA	15
4	Kryshen E.L.	Study of neutral meson production with photon conversions in the MPD experiment at NICA	15
5	Kostenko B.F.	On possibility of observing quark oscillator excitations in deuteron nucleus	15

4 July

Section 3A. **Theory of atomic nucleus**

11:50 – 13:30, 15:00 – 16:40 (*Dialogue Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Khrushchov V.V.	Joint report: 1. Refinement of the neutrino-gallium capture cross section and the contributions of sterile neutrinos for the interpretation of neutrino data on the gallium anomaly 2. Interpretation of the reactor anomaly of neutrino data in models with sterile neutrinos	20
2	Yurev S.A.	Relativistic form factors of three-nucleon nuclei in the framework of the Bethe-Salpeter-Faddeev formalism	15
3	Koroteev G.A.	Decomposition of the charge-exchange strength functions for $^{76}\text{Ge}$ and $^{74}\text{Ge}$ isotopes	15
4	Kondratyev V.N.	Magnetic and thermal effects in neutrino scattering in hot and dense nuclear matter	15
5	Kopysov Yu.S.	The first models of friable nuclear matter in the form of nuclear-molecular activated complexes and nuclear-molecular crystals	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Valiolda D.S.	Coulomb breakup of halo nuclei	20
2	Chugunov A.I.	Plasma screening enhancement of nuclear fusion reactions and detailed balance principle	15
3	Sorokin Yu.I.	Width of oscillator energy level, photon spin and needle-shaped construction of photon	15

Coffee break 16:40 – 17:10



4 July

Section 4. **Theory of nuclear reactions**

11:50 – 13:30, 15:00 – 16:40, 17:10 – 19:00 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Lekala M.L.	Low-energy nuclear reactions with light exotic nuclei	20
2	Urazbekov B.A.	The mechanisms of nuclear reactions induced by interaction of $^3\text{He}$ with $^9\text{Be}$ nuclei	15
3	Azhibekov A.K.	Theoretical analysis of neutron transfer and breakup in ( $^{11}\text{Li} + ^9\text{Be}$ ) and ( $^{11}\text{Li} + ^{12}\text{C}$ ) reactions at low energies	15
4	Solovyev A.S	Elastic scattering and radiative capture in the $^4\text{He} + ^3\text{H}$ and $^4\text{He} + ^3\text{He}$ systems	15
5	Unzhakova A.V.	Cluster formation calculations for symmetric fission of actinides	15

Lunch 13:30 – 15:00

	Speaker	Title of report	Duration, min
1	Matulewicz T.	Charged kaon emission from 1.9 A GeV Ni + Ni interactions	15
2	Andronov E.V.	Strongly intensive fluctuations between multiplicity and total transverse momentum in relativistic P + P and P + Pb collisions from multi-pomeron exchange approach	15
3	Pshenichnov I.A.	Secondary nuclei from peripheral and ultraperipheral collisions of relativistic heavy-ions	15
4	Svetlichnyi A.O.	Free and bound spectator nucleons in hadronic interactions of relativistic nuclei	15
5	Uzhinsky V.	Toward application of the HIJING model for simulations of nucleus-nucleus interactions at $E_{\text{CMS,NN}} \sim 5\text{--}15$ GeV	15

Coffee break 16:40 – 17:10

4 July

	Speaker	Title of report	Duration, min
1	D'yachenko A.T.	Joint report: 1. Emission of high-energy protons and gamma quanta in heavy ion collisions in hydrodynamic approach 2. Spectra of protons and subthreshold pions in heavy-ion collisions in the hydrodynamic approach with a non-equilibrium equation of state	20
2	Uzikov Yu.N.	Short-range $NN$ correlations in the reaction $^{12}\text{C} + p \rightarrow ^{10}\text{A} + pp + N$	15
3	Golovanova N.F.	Similarity and distinction in elastic proton-proton and proton-antiproton scattering's description with two relativistic amplitudes at high energy	15
4	Prokhorova D.S.	Pseudorapidity dependence of multiplicity fluctuations and correlations	15

5 July

**5 July**

**Plenary session**

9:30 – 11:10, 11:50 – 14:00 (*Congress Hall, 4th Floor*)

	Speaker	Title of report	Duration, min
1	Piasecki E.	Dissipation and tunneling in heavy-ion reactions around the Coulomb barrier	30
2	Urin M.H.	Particle-hole dispersive optical model: unique features and new implementations	30
3	Jolos R.V.	Shape and pairing phase transitions in atomic nuclei	30

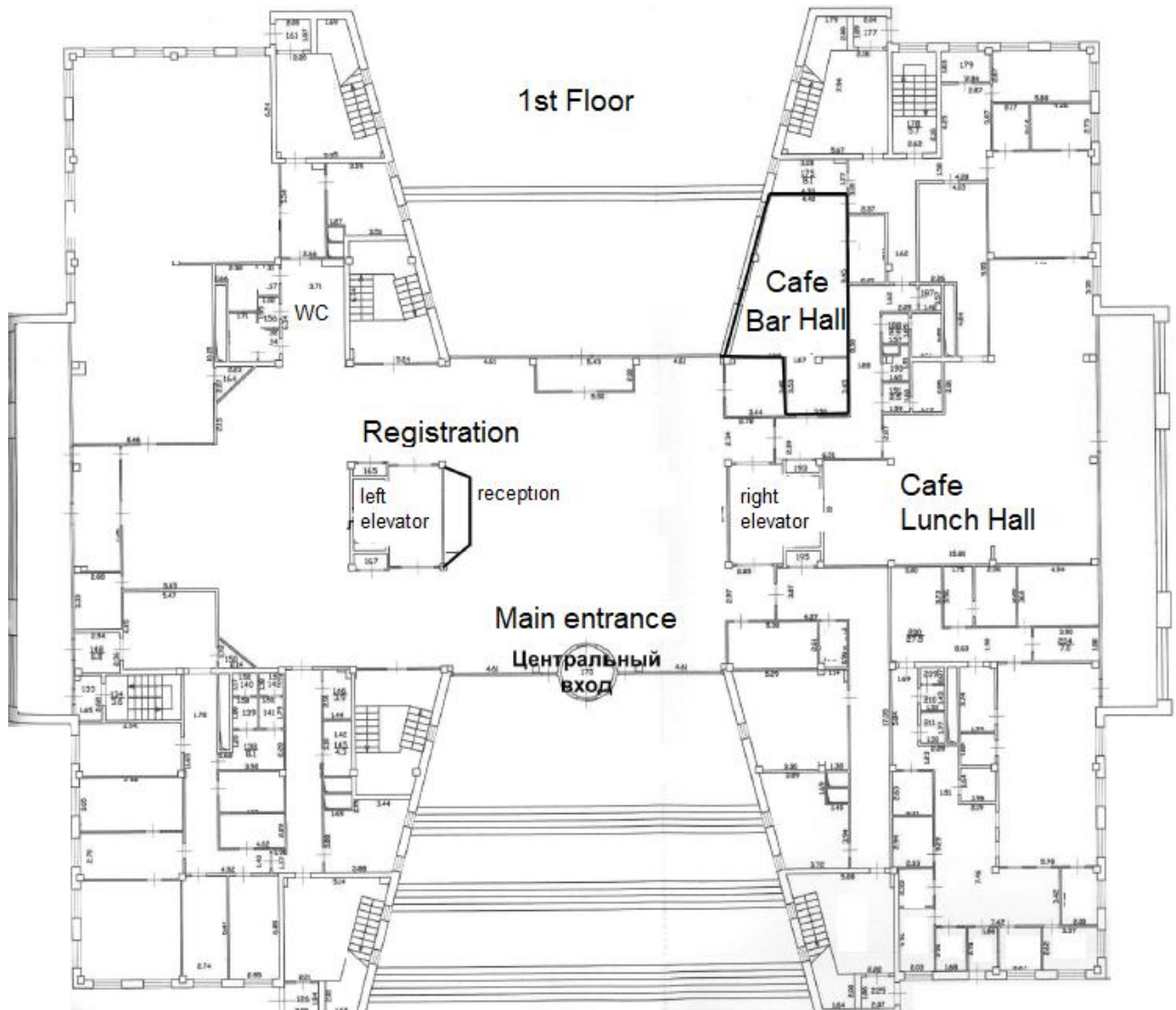
Coffee break 11:10 – 11:50

	Speaker	Title of report	Duration, min
1	Tarasov O.B.	A big step towards the study of super-heavy calcium isotopes	20
2	Borzov I.N.	Fully self-consistent study of isobaric analog resonances	20
3	Lutostansky Yu.S.	Isobaric charge-exchange resonances and the solar neutrinos capture by nuclei	20
4	Karpeshin F.F.	Collinear tri-partition and the collective nuclear model	20
5	Kovalenko V.N.	Role of string collectivity in the multiparticle production in ultrarelativistic collisions of hadrons and nuclei	20
6	Samarin V.V.	Time-dependent description of nucleon and $\alpha$ -cluster transfer reactions	20

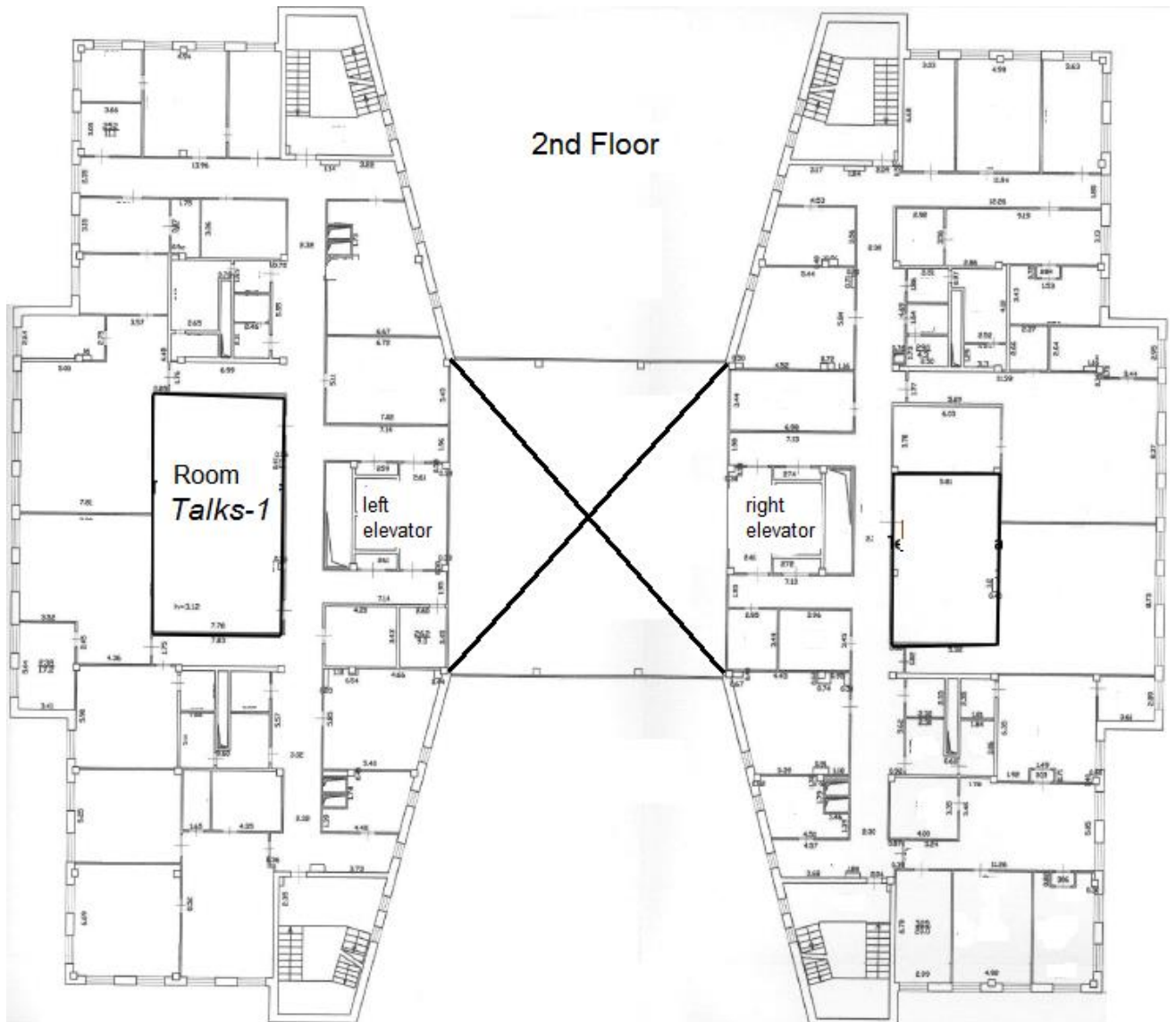
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# Scheme of conference places in Congress Center

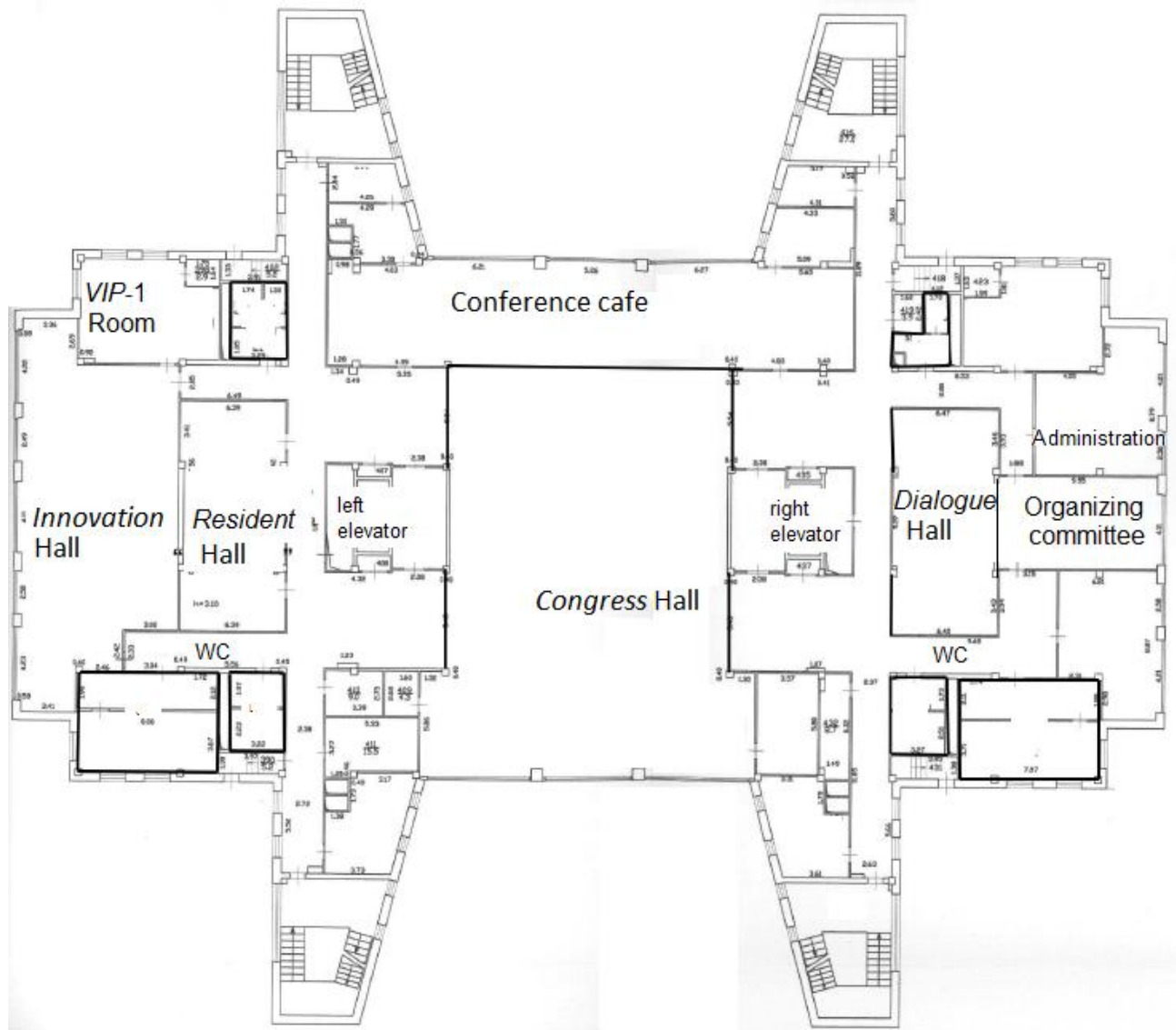
## 1st Floor



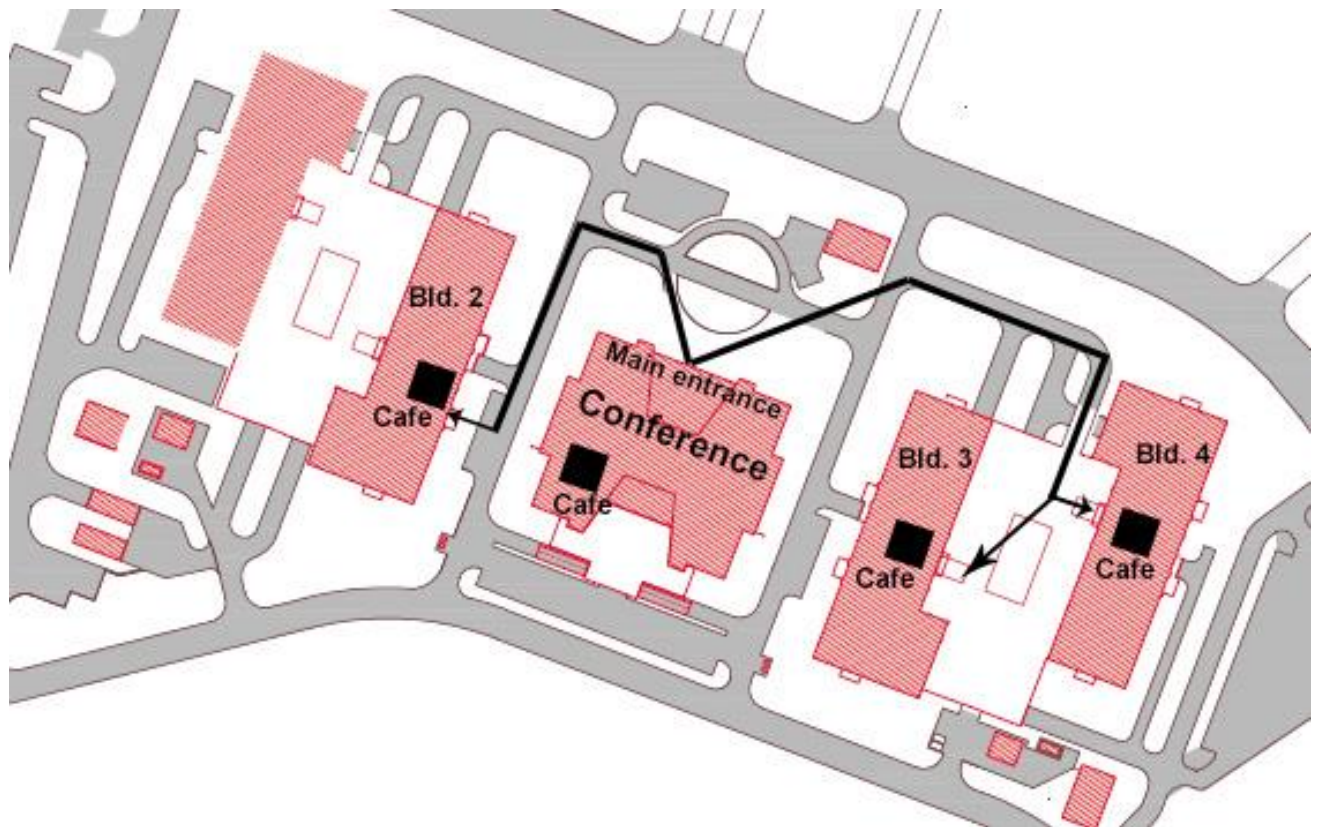
## 2nd Floor



# 4th Floor



## Cafes in Congress Center



## Sessions

Name	Place
Plenary session	<i>Congress Hall, 4th Floor</i>
Section 1. <i>Experimental study of properties of atomic nuclei</i>	<i>Resident Hall, 4th Floor</i>
Section 2. <i>Experimental study of mechanisms of nuclear reactions</i>	<i>Innovation Hall, 4th Floor</i>
Section 3. <i>Theory of atomic nucleus and fundamental interactions</i>	
Subsection 3A. <i>Theory of atomic nucleus</i>	<i>Dialogue Hall, 4th Floor</i>
Subsection 3B. <i>Theory of fundamental interactions, few- and many-body systems</i>	<i>Talks-1 Room, 2nd Floor</i>
Section 4. <i>Theory of nuclear reactions</i>	<i>Congress Hall, 4th Floor</i>
Section 5. <i>Application of nuclear physics methods in related fields of science and technology</i>	
Subsection 5A. <i>Application of nuclear physics methods in related fields of science and technology</i>	<i>VIP-1 Room, 4th Floor</i>
Subsection 5B. <i>Technics and methods of experiment</i>	<i>Resident Hall, 4th Floor</i>



## Timetable

	<b>June 30</b>	<b>July 1</b>	<b>July 2</b>	<b>July 3</b>	<b>July 4</b>	<b>July 5</b>
09:00 – 09:30		Registration in Congress Center 09:00 – 10:00				
09:30 – 10:00		Opening Plenary session 10:00 – 11:30	Plenary session 09:30 – 11:10	Plenary session 09:30 – 11:10	Plenary session 09:30 – 11:10	Plenary session 09:30 – 11:10
10:00 – 11:30						
11:30 – 12:00		Coffee break 11:30 – 12:00	Coffee break 11:10 – 11:50	Coffee break 11:10 – 11:50	Coffee break 11:10 – 11:50	Coffee break 11:10 – 11:50
12:00 – 13:30		Plenary session 12:00 – 13:30	Sections 1, 2, 3A, 3B, 4, 5A 11:50 – 13:30	Sections 2, 3A, 4, 5B 11:50 – 13:30	Sections 2, 3A, 4 11:50 – 13:30	Plenary session Closing 11:50 – 14:00
13:30 – 15:00		Lunch 13:30 – 15:00	Lunch 13:30 – 15:00	Lunch 13:30 – 15:00	Lunch 13:30 – 15:00	
15:00 – 16:40		Sections 1, 2, 3A, 3B, 5A 15:00 – 16:40	Sections 1, 2, 3A, 4 15:00 – 16:40	Sections 2, 3A, 4, 5B 15:00 – 16:40	Sections 2, 3A, 4 15:00 – 16:40	
16:40 – 17:10		Coffee break 16:40 – 17:10	Coffee break 16:40 – 17:10	Coffee break 16:40 – 17:10	Coffee break 16:40 – 17:10	
17:10 – 19:00		Registration in hotel Dubna 17:00 – 21:00	Sections 1, 2, 3A, 3B, 5A 17:10 – 19:00	Poster session 17:10 – 19:00	Sections 2, 3A, 4, 5B 17:10 – 19:00	Sections 2, 3A, 4 17:10 – 19:00
19:00 – 21:00	Welcome party 19:00 – 21:00					

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