JOINT INSTITUTE FOR NUCLEAR RESEARCH

BLTP Bogoliubov Laboratory of Theoretical Physics

BLTP-IN2P3 collaboration in theoretical physics: short overview

Victor Voronov

BOGOLIUBOV LABORATORY OF THEORETICAL PHYSICS

Laboratory of Theoretical Physics, JINR

May 25, 1956

ПРИКАЗ

ПО ЛИЧНОМУ СОСТАВУ ОБ"ЕДИНЕННОГО ИНСТИТУТА

№ 5

"25" мая 1956 года.

До утверждения новой структуры Института возложить на академика БОГОЛЮБОВА Николая Николаевича /начальника сектора № 3 Теоретической лаборатории/ исполнение обязанностей директора Теоретической лаборатории об"единенного Института.

ДИРЕКТОР
ОБ"ЕДИНЕННОГО ИНСТИТУТА ЯДЕРНЫХ ИССЛЕДОВАНИЙ

Д.И. БЛОХИНЦЕВ

ПО ЛИЧНОМУ СОСТАВУ ОБ"ЕДИНЕННОГО ИНСТИТУТА

№ 6

"25" мая 1956 г.

ЗАЧИСЛИТЬ: 1. БОГОЛЮБОВА Николая Николаевича временно начальником сектора № 3 Теоретической лаборатории с окладом 6000 руб. в месяц, с 1 июня с.г.

2. ШИРКОВА Дмитрия Васильевича старшим научным сотрудником сектора № 3 Теоретической лаборатории с окладом 1500 руб. в месяц по совместительству, с 1 июня с.г.

3. МЕДВЕДЕВА Бориса Валентиновича старшим научным сотрудником сектора № 3 Теоретической лаборатории с окладом 1500 руб. в месяц по совместительству, с 1 июня с.г.

4. ПОЛИВАНОВА Михаила Константиновича научным сотрудником сектора № 3 Теоретической лаборатории с окладом 1000 руб. в месяц по совместительству, с 1 июня с.г.

ДИРЕКТОР
Б"ЕДИНЕННОГО ИНСТИТУТА ЯДЕРНЫХ ИССЛЕДОВАНИЙ

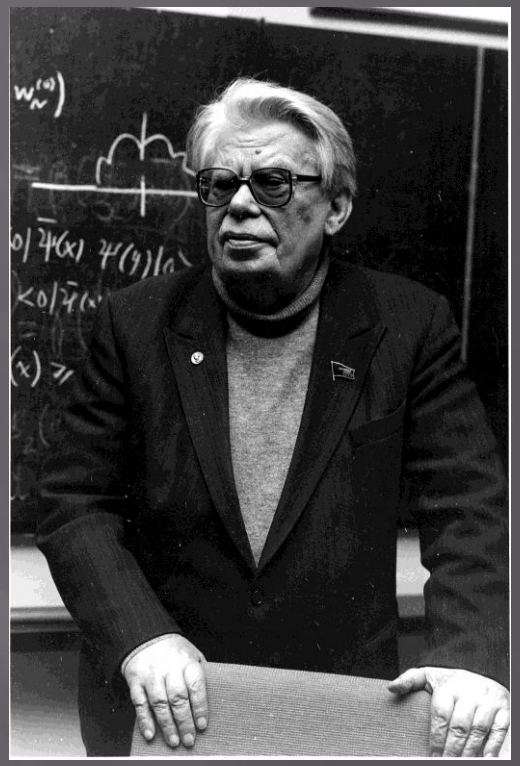
Д.И. БЛОХИНЦЕВ

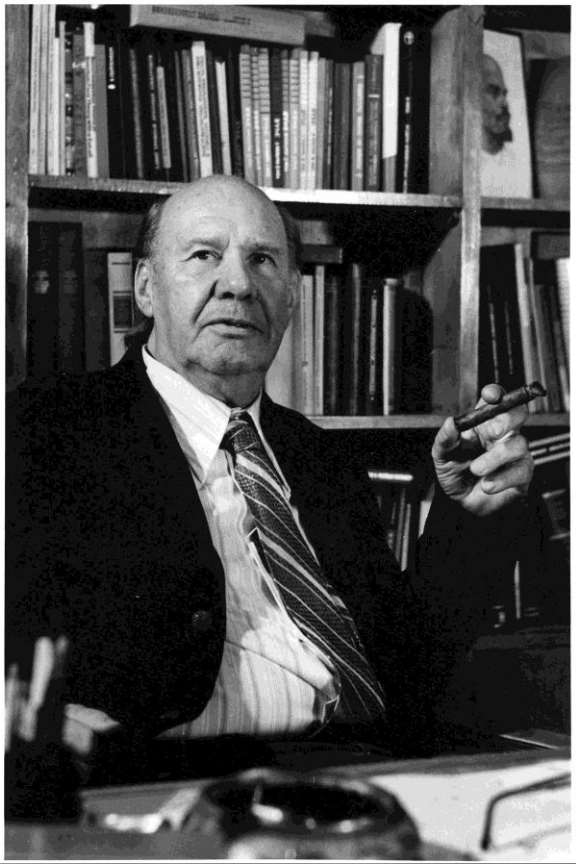
Nikolai Nikolaevich Bogoliubov (1909–1992) is a distinguished scientist in the field of physics and mathematics. His scientific activity began in Kyiv (1923–1947) and then continued in Moscow (since 1949) and Dubna (since 1956). Main scientific results in the fields:

- Nonlinear mechanics: asymptotic methods, stability theory ;
- Statistical physics: kinetic equations, quasiaverages for systems with spontaneously broken symmetries;
- Quantum statistics: microscopic theory of Bose-gas superfluidity, microscopic theory of superconductivity ;
- Quantum field theory: axiomatic scattering matrix, general renormalization theory, renormalization group theory, proof of dispersion relations;
- Elementary Particle Theory: "quark bag" model, quantum number "colour".

N.N. Bogoliubov's scientific activity began at the age of 14 –15. His major independent results were obtained when he was 20–25.

N.N. Bogoliubov's scientific activity is specified by considerable mathematical culture and directness to solution of concrete problems of natural science.





1908 – 27.01.1979), one of the pioneers of atomic science and technology in USSR, the organizer and the first director of the JINR.

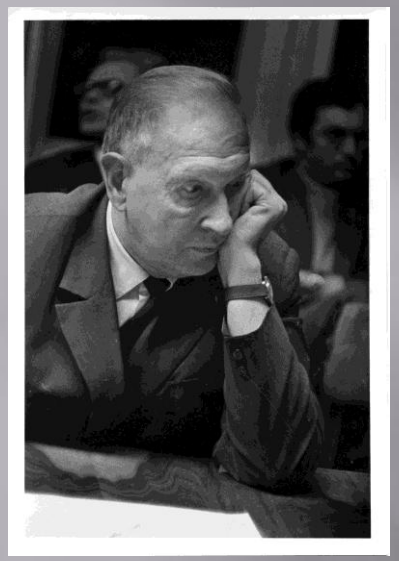
Main scientific results in the fields:

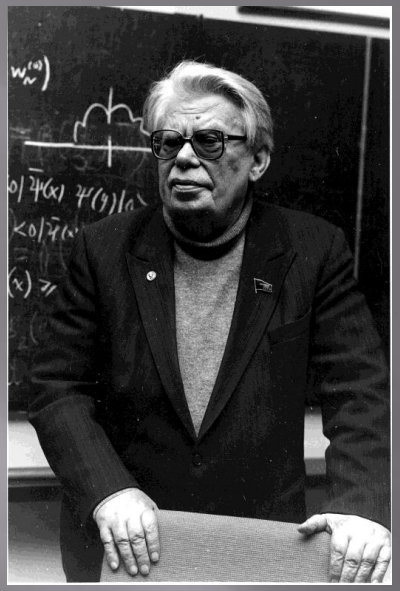
- Quantum mechanics
- Acoustics of an inhomogeneous moving medium
- Neutron physics
- Quantum field theory
- Paricle physics

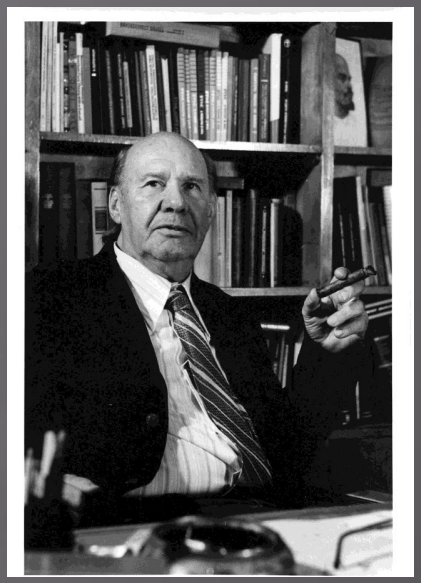
1954 – the scientific supervisor of creation and putting into operation of the world first atomic power station.

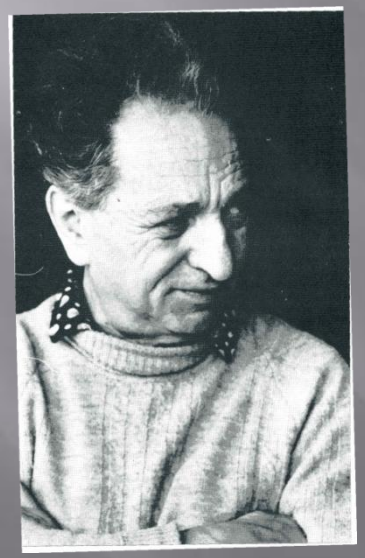
1956- 1965 – the JINR Director

1965 – 1979 – Director of Lab of Theoretical Physics



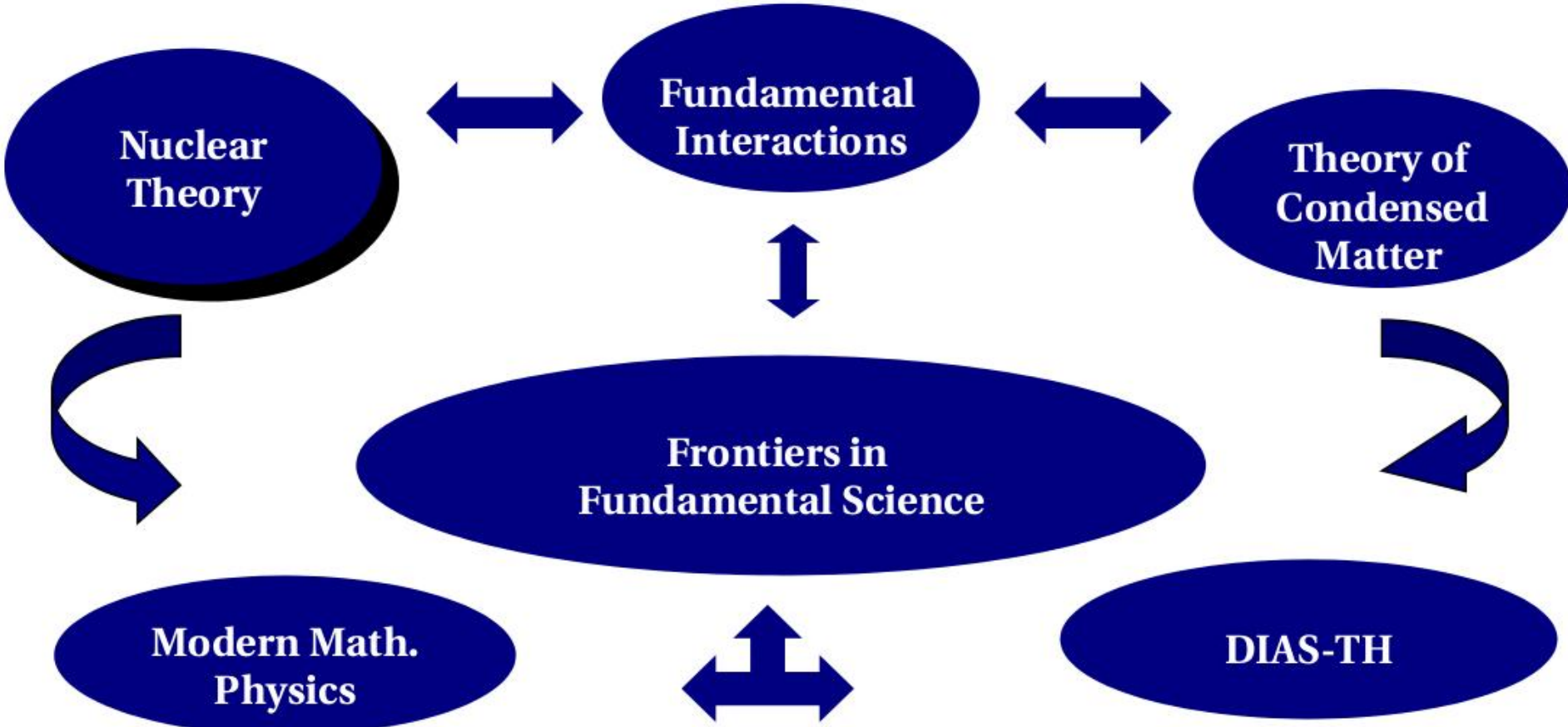






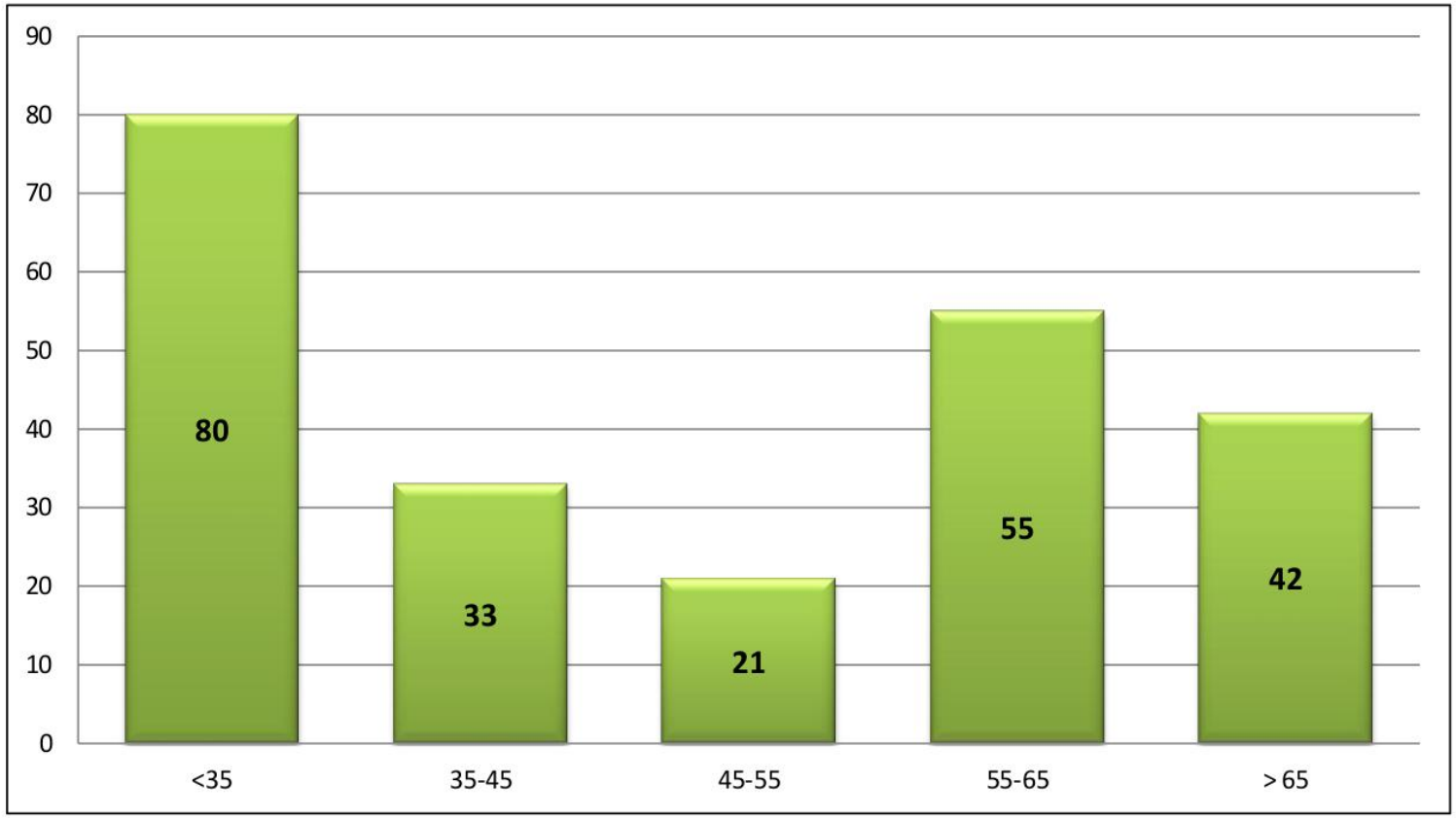
Scientific Policy:
Multidisciplinary research,
theoretical physics on the basis of advanced mathematics,
support of the JINR experimental programme,
strengthening of the efficiency of scientific staff through the interplay of research and education.

Научная политика ЛТФ:
Междисциплинарные исследования,
Теоретическая физика на основе современной математики,
поддержка экспериментальных программ ОИЯИ,
укрепление научного потенциала через взаимодействие науки и образования.



Scientific Personnel

	D	C	O	Total
Fundamental Interactions	30	27	26	**83**
Nuclear Physics	25	23	20	**68**
Condensed Matter	16	22	10	**48**
Mathematical Physics	13	12	7	**32**
Total	**84**	**84**	**63**	**231**


90
80
70
60
50
40
30
20
10
0
80
33
21
55
42
<35
35-45
45-55
55-65
> 65

SCIENTIFIC PERSONNEL BY COUNTRY (BLTP)

Country	Total	Country	Total
Russia	165	Germany	6
Czech Republic	5	Poland	3
Mongolia	1	Bulgaria	7
Turkey	1	Korea	1
Belarus	2	India	3
Kazakhstan	9	Uzbekistan	3
Slovakia	7	Moldavia	1
Azerbaijan	2	Mexico	1
Ukraine	3	Romania	3
Tajikistan	1	Japan	1
Vietnam	1	Argentina	1
Armenia	4		
Total - 231 (165 scientists from Russia and 66 from other countries)			

2014-2018: Themes and projects

Theory of Fundamental Interactions

Projects:

- Standard Model and Its Extension,
- QCD Parton Distributions for Modern and Future Colliders,
- Physics of Heavy and Exotic Hadrons,
- Hadronic matter under extreme conditions

Theory of Nuclear Structure and Nuclear Reactions

Projects:

- Nuclear Structure far from Stability Valley
- Nucleus-Nucleus Collisions and Nuclear Properties
- Exotic Few-Body Systems,
- Nuclear Structure and Dynamics at the Relativistic Energies.

Theory of Condensed Matter

Projects:

- Physical properties of complex materials and nanostructures
- Mathematical problems of many-particle systems

Modern Mathematical Physics: Strings and Gravity, Supersymmetry, Integrability

Projects:

- Quantum groups and integrable systems
- Supersymmetry
- Quantum gravity, cosmology and strings

Research and Education Project "Dubna International School of Theoretical Physics (DIAS-TH)"

BLTP PUBLICATIONS (2012-2016)

	2012	2013	2014	2015	2016	Total
Journal publications	382	363	364	356	370	1835
Conference proceedings	97	122	131	142	165	657
Total	479	485	495	498	535	2466

BLTP Bogoliubov Laboratory of Theoretical Physics

Meetings in BLTP 2017

| 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | *2017*

January 30 - February 4
XIIIth Winter School on Theoretical Physics
Heavy Ion Physics: from LHC to NICA

April 10 - 12
International Workshop
Simulations of HIC for NICA energies

June 6 - 8
International Session-Conference SNP PSD RAS
Physics of Fundamental Interactions

June 6 - 10, Prague, Czech Republic
XXV International Conference
Integrable Systems and Quantum Symmetries

July 10 - 14
Mini-Workshop on
Lattice and Functional Techniques for Exploration of Phase Structure and Transport Properties in Quantum Chromodynamics

July 10 - 22
Helmholtz International Summer School
Nuclear Theory and Astrophysical Applications

July 10 - 15, Yerevan, Armenia
XVIIth International Conference
Symmetry Methods in Physics (SYMPHYS)

July 16 - 23, Tsakhkadzor, Armenia
International School
Symmetry in Integrable Systems and Nuclear Physics

July 24 - 29
International Conference
Classical and Quantum Integrable Systems (CQIS-2017)

July 25 - 31, St.Petersburg, Russia
11th APCTP-BLTP JINR-PINP NRC KI-SbSU Joint Workshop
Modern problems in nuclear and elementary particle physics

July 31 - August 5
International Workshop
Supersymmetries and Quantum Symmetries (SQS'2017)

August 6 - 12
International School
Advanced Methods of Modern Theoretical Physics: Integrable and Stochastic Systems

August 20 - September 1, Prague, Czech Republic
VIIth International Pontecorvo
Neutrino Physics School

August 20 - September 2
Helmholtz International Summer School
Hadron Structure, Hadronic Matter and Lattice QCD

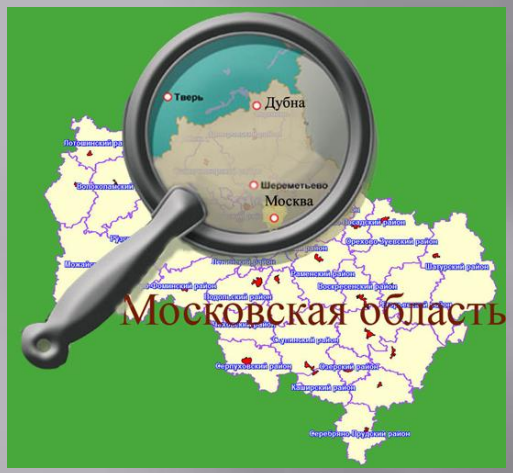
September 4 - 8
IVth Russian-Spanish Congress
Particle, Nuclear, Astroparticle Physics and Cosmology

September 11 - 15
XVIIth International Workshop on
High Energy Spin Physics (DSPIN-17)

November 26 - December 1, Shenzhen, China
BLTP/JINR - SKLTP/CAS Joint Workshop
Physics of Strong Interacting Systems


GIASSO


Hartree-Fock and HF-Bogoliubov
$|HFB\rangle = \prod_\mu a_\mu \prod_\nu (u_\nu + v_\nu a^\dagger_\nu a^\dagger_{\bar{\nu}})|0\rangle$
$\beta_\mu |HFB\rangle = 0$
INTERNET
СКС "ДУБНА"



DUBNA

JINR

BLTP

Welcome!

Thank you for your attention!