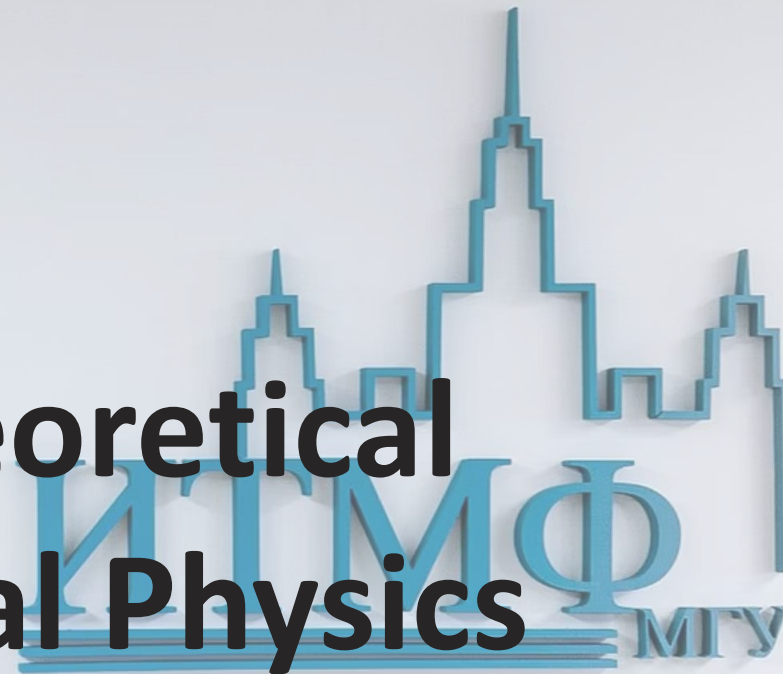




M.V. Lomonosov Moscow State University



Institute for Theoretical and Mathematical Physics



<https://itmp.msu.ru/en/>

Year 2025

About ITMP MSU

ITMP is a division of Moscow State University, founded in December 2018 and supported by the Theoretical Physics and Mathematics Advancement Foundation “BASIS”.

ITMP is a center for advanced research in fundamental theoretical and mathematical physics. It is also a platform for cooperation between researchers, students and PhD students.

The activity of the Institute is focused on the following

- string theory and quantum gravity

- conformal field theories and AdS/CFT correspondence

- integrable systems

- quantum field theory and mathematical methods

- modified gravity and cosmology

-  Since its founding, ITMP MSU works as an international research center

Scientific Council

The Scientific Council determines the development strategy and operating principles of ITMP. It makes key personnel decisions. The Council includes outstanding researchers, scientific organizers, and ITMP MSU staff.

ARKADY TSEYTLIN

Director of ITMP MSU, Professor of Imperial College London (UK)

GLEB ARUTYUNOV

University of Hamburg (Germany)

VLADIMIR BELOKUROV

Faculty of Physics MSU

MIKHAIL VASILIEV

Lebedev Physical Institute RAS

MAXIM GRIGORIEV

ITMP MSU & Lebedev Physical Institute RAS

SERGEY KOZYREV

Steklov Mathematical Institute RAS

DMITRY LEVKOV

ITMP MSU & Institute for Nuclear Research RAS

ALEXEY SEMIKHATOV

Lebedev Physical Institute RAS

ITMP MSU Team



Director

Research interests of Arkady Tseytlin include quantum field theory and quantum gravity, superstring theory, conformal theories and AdS/CFT correspondence. He obtained several key results in superstring theory and field theory. In particular, he developed sigma model approach to string theory, discovered fundamental role of Born-Infeld action as an open string effective action, developed a method for constructing composite solitonic supergravity solutions describing supersymmetric bound states of branes, contributed to investigations of D-branes that had led to AdS/CFT duality, constructed an action of superstrings in $AdS_5 \times S^5$ space, and made substantial contributions to integrability-based approach to gauge-string duality.

Prof.
Arkady Tseytlin

Professor Arkady Tseytlin was awarded the Isaac Pomeranchuk Prize in 2023. Prof. Tseytlin was elected a member of the Royal Scientific Society of Great Britain in 2025.

Deputies Director

Maxim Grigoriev

Candidate of Physical and Mathematical
Sciences

Dmitry Levkov

Candidate of Physical and Mathematical
Sciences

Olga Vasilieva

Candidate of Philological Sciences

Administration

The effective operation of ITMP MSU is ensured by a professional administrative team that provides comprehensive support for scientific and educational projects.

Scientific Members

The ITMP research team is formed based on the results of international open competitions and includes leading research fellows, postdocs, junior research fellows-teachers and graduate students with varying degrees of employment.

3

Senior Researchers

were selected based on the results of an international competition (professorial level positions), full-time employed

6

Postdocs

are winners of international postdoc competitions

11

Senior Researchers and Lecturers

from the institutes of the Russian Academy of Sciences, part-time employed

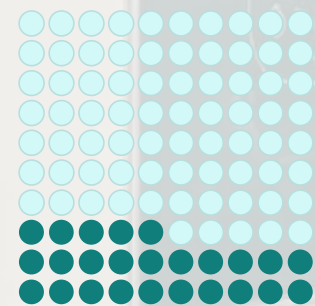
7

Research Fellows and Lecturers

from leading Russian scientific centers, part-time employed

8

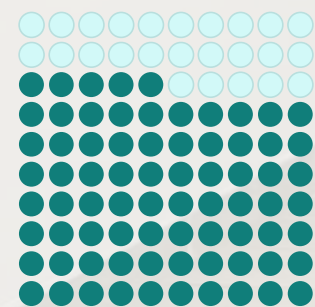
PhD Students



2/8

Full-time PhD Students

Including 2 international students (China)



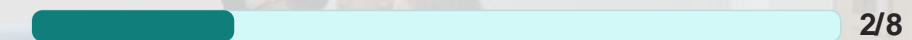
6/8

Part-time PhD Students

conducting research and seminars



Thesis defended in 2023-2024



Planning a thesis defense in 2025

i In addition to the core faculty, the Institute has five associate members, who are the leading scientists from RAS institutes. They are invited by the ITMP Scientific Council for supervising research of students and PhD students and giving elective courses.

Senior Researchers

selected based on the results of the international competitions (term of the position is 5 years)



Sergey Solodukhin

Doctor of Physical and
Mathematical Sciences – Lebedev
Physical Institute (2006)

H-Index – 38

Number of publications in the last 5
years (2018-2024) – 12,
all in journals with high impact factors



Dmitry Ponomarev

PhD – University of Mons, Belgium
(2013)

H-Index – 18

Number of publications in the last
5 years (2018-2024) – 12,
all in journals with high impact
factors



Sabir Ramazanov

Candidate of Physical and Mathematical Sciences (2012)

H-Index – 15

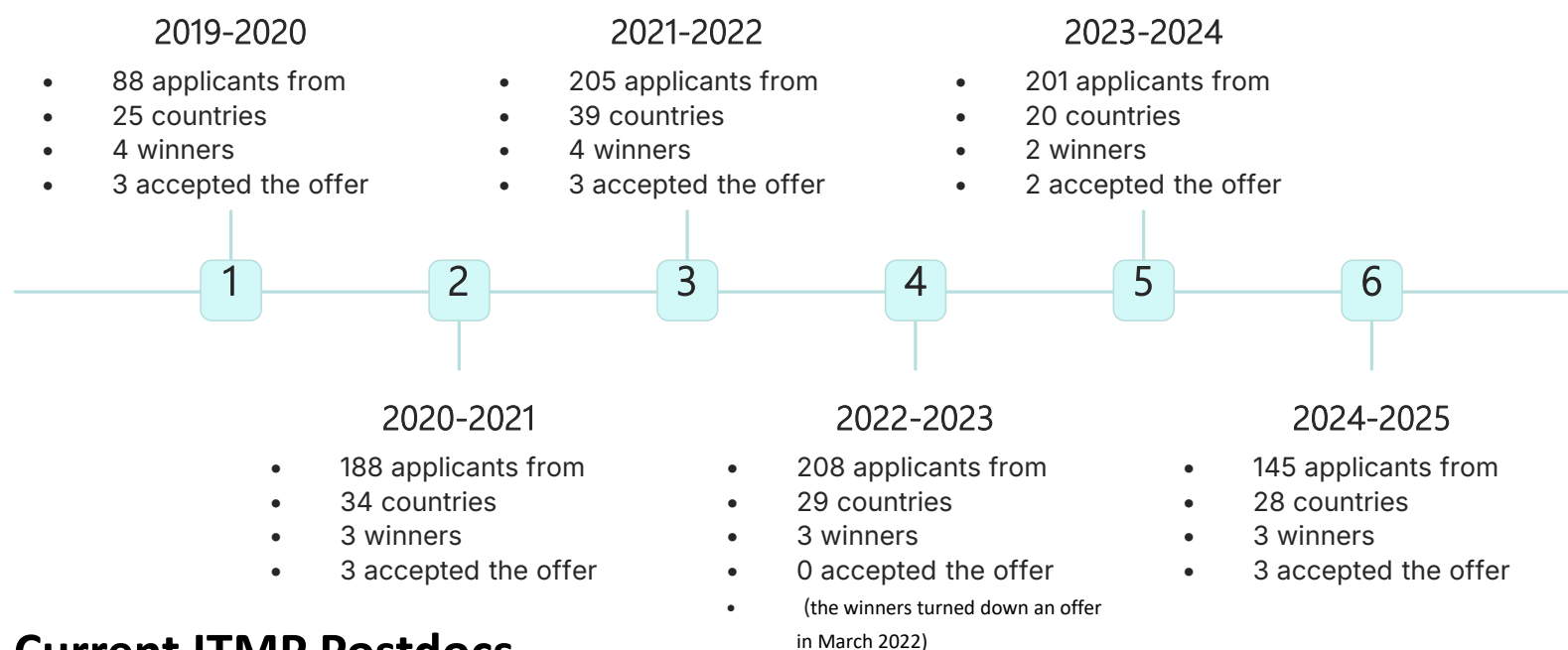
Number of publications in the last 5 years (2018-2024) – 18, all in journals
with high impact factors

INSTITUTE FOR THEORETICAL
AND MATHEMATICAL PHYSICS
Lomonosov Moscow State University



Postdocs

selected on the basis of open calls for postdoc positions (term of the position is 2 years)



Current ITMP Postdocs

Sergei Ovchinnikov

PhD (University of Edinburgh, UK, 2023)

David Rivera Betancour

PhD (Ecole Polytechnique de Paris, France, 2023)

Ali Fatemiabhari

PhD (Swansea University, UK, 2024)

Felipe Diaz Martinez

PhD (Andrés Bello National University, Chile, 2024)

Mauricio Valencia Villegas

PhD (ITMP MSU, 2025)

Zhenmin Zeng

PhD (Institute of Theoretical Physics, Chinese Academy of Sciences, 2025)



Cooperation

ITMP is a platform for cooperation between students, PhD students, lecturers and researchers from the leading national and foreign research centers and universities.

Cooperation with RAS:

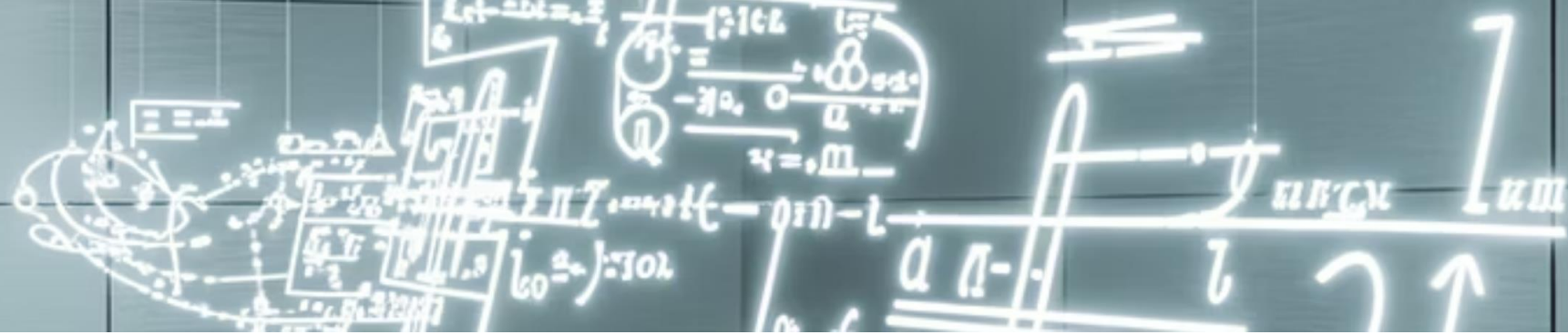
- Lebedev Physical Institute RAS
- Institute for Nuclear Research RAS
- Steklov Mathematical Institute RAS
- Landau Institute for Theoretical Physics

Researchers from RAS institutes supervise research work of students and PhD students, give courses of the master's programs “Quantum gravity and mathematical physics” and “Geometry and quantum fields”, and read elective courses.

International Cooperation:

- Imperial College London (UK)
- Université Libre de Bruxelles (Belgium)
- Université de Tours (France)
- Max-Planck-Institut für Gravitationsphysik (Germany)
- Ludwig-Maximilians Universität München (Germany)
- Universität Hamburg (Germany)

Researchers from the international scientific centers give public lectures, take part in the ITMP research seminars, and collaborate with the ITMP employees.




Research

200

publications

Publications affiliated with ITMP:

The majority of scientific papers by the ITMP research fellows are published in the top 25% of journals according to Thomson Reuters (152 out of 209 published papers).

 The data on the publication ratings were downloaded from the IAS "ISTINA" as of November 01, 2026

53

conference talks in 2025

Participation in conferences

In 2024, ITMP MSU scientific members and PhD students presented 27 reports affiliated with the Institute at the international and national conferences.

Geography of events: Russia, Austria, Armenia, Belgium, China, Japan.

Selected conferences in 2024:

1

International Workshop «Problems of Modern Mathematical Physics (PMMP'25)

Dubna, Russia

2

International workshop «Beyond BSM-2025»

Ascona, Switzerland

3

Workshop and SRitp Advanced School «LULBI-Light and Ultra-light BSM Interactions»

Rehovot, Israel

4

Integrable Systems Blackboard Seminar

Beijing, China

Research Seminar and Dissertation Supervision

ITMP Research Seminar

A platform for presentation of scientific results by invited researchers and ITMP scientific fellows.

23 seminars were held in 2025. The participants of the seminars include employees of Russian and foreign research centers:

- University of Oxford
- Harvard University
- University of Mons
- University of California
- Lebedev Physical Institute
- MIPT, etc.

Seminars and presentations announcements are available here: <https://itmp.msu.ru/research/seminar/>

Scientific supervision of candidate and master's dissertations

A PhD thesis by ITMP PhD student Valencia Villegas M. (supervisor S.A. Mironov) has successfully passed the pre-defence procedure and will be defended in summer of 2026.

i Currently, ITMP staff are supervising the research work of 5 PhD students.

In 2025, 4 master's theses were defended under the scientific supervision of the Institute's staff.





ITMP MSU Educational Projects

01

Master's program and Specialist's program

«Quantum gravity and mathematical physics» (a joint Master's program with the Faculty of Physics MSU started in 2019, Specialist's program started in 2023)

02

Specialist's program

«Fundamental Mathematics and Mathematical Physics» (a joint program with the MSU Faculty of Mechanics and Mathematics started in 2020)

03

English-taught Master's program

«Geometry and quantum fields» (a joint program with the MSU Faculty of Mechanics and Mathematics started in 2022)

04

Elective courses and public lectures

for the MSU students of faculty of mechanics and mathematics and MSU Faculty of Physics every semester since 2019

05

Winter School

for the bachelor-level students specializing in theoretical and mathematical physics (every year since 2020)

06

Support for the Master's program

Support for the Master's program in Condensed Matter Physics and visiting lecturers in the Department of Particle Physics and Cosmology (at the Faculty of Physics since 2023)

Specialist's Program «Fundamental Mathematics and Mathematical Physics»

About the Program

The joint specialist program with MSU faculty of mechanics and mathematics was launched in 2020. The main feature of the new educational program is a combination of a strong mathematical training with a bias in modern theoretical physics, focus on the physical view of problems and mathematical apparatus needed to understand physical theories.

More information here: <https://fmmp.math.msu.ru/>



Director

Iskander Asanovich Taimanov

Doctor, full member of the Russian Academy of Sciences, Chief Researcher of the Sobolev Institute of Mathematics (Novosibirsk)

Current status

In the 2025/2026 academic year, 133 people are studying in the program.

Dynamics of first-year enrollment

2022

25 budget places

- 25 students
- 18 Number of Gold Medallists
- 11 Number of Olympiad Winners and Prize-Winners
- FMMP admission score : 343

2023

25 budget places

- 25 students
- 16 Number of Gold Medallists
- 15 Number of Olympiad Winners and Prize-Winners
- FMMP admission score : 377

2024

30 budget places

- 35 students
- 11 Number of Gold Medallists
- 11 Number of Olympiad Winners and Prize-Winners
- FMMP admission score : 379

2025

40 budget places. 2 student groups

- 42 students
- 24 Number of Gold and Silver Medallists
- 8 Number of Olympiad Winners and Prize-Winners
- FMMP admission score: 357



The first graduates of the program were in 2025

9 students graduated

3 students graduated with honors

Lecturers of the program

Each semester, 10 to 15 employees from leading Russian universities and research institutes (HSE, Steklov Institute of Mathematics, etc.) are involved in giving lectures.

International Master's Program "Geometry and Quantum Fields"

The first English-taught international Master's program in Mathematics at MSU.

The joint master's program "Geometry and Quantum Fields" was developed in 2021 by ITMP MSU and the MSU Faculty of Mechanics and Mathematics.

The focus of the program is on the physics and mathematics of the fundamental interactions, with a special emphasis on quantum gravity. A unique aspect of the program is its aim to integrate a variety of mathematical disciplines, with special attention to geometry, along with courses in quantum field theory, gravity, string theory and holography.

Program Directors



Prof. Arkady Tseytlin

Director of ITMP MSU, Professor of Theoretical Physics, Imperial College London



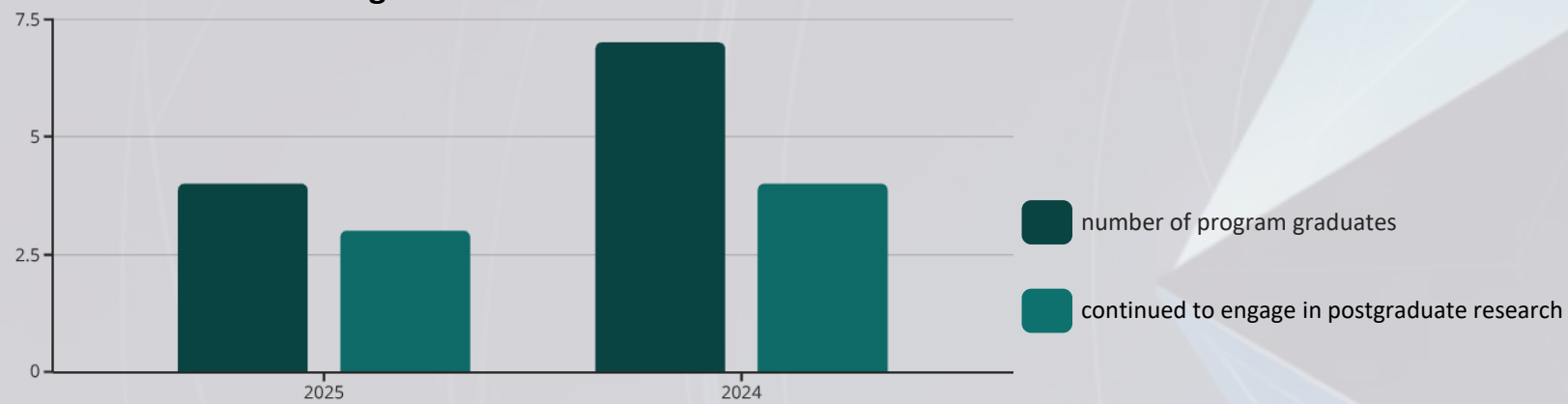
Prof. Andrei Shafarevich

Dean of the Faculty of Mechanics and Mathematics, MSU

In the 2025/2026 academic year, 15 students are enrolled in the program:

- 2 Russian students are graduates of St. Petersburg State University and Moscow Institute of Physics and Technology.
- 13 international students (Algeria, India, Italy, China, Cuba, South Korea)

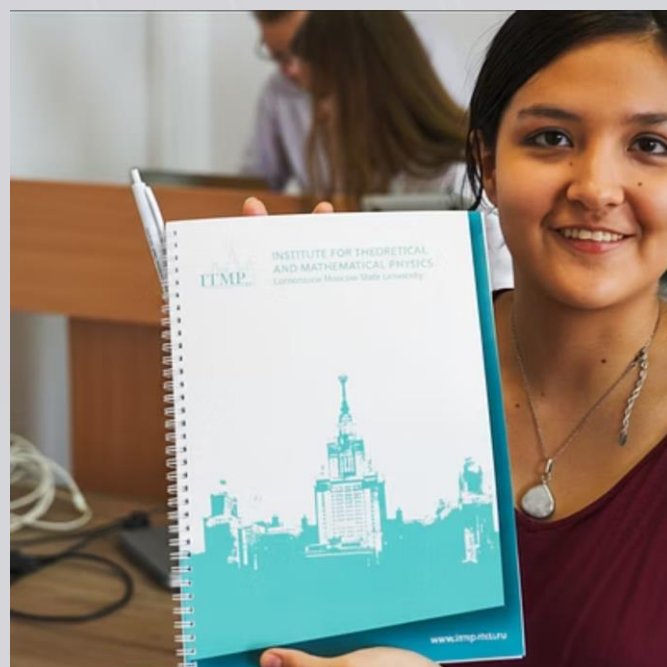
two graduations of students



A lecture "Quantum Reality and Quantum Computer. A very general overview" by ITMP Scientific Council member and Doctor of Physical and Mathematical Sciences Alexey Mikhailovich Semikhatov at the ITMP Alumni Day (June 2025).

3 graduates joined ITMP MSU research team, winning the competition for postgraduate positions.

The program demonstrates high effectiveness in training highly qualified personnel and contributes to strengthening international scientific cooperation.



Education

Elective Courses

During the past 5 years ITMP offered 55 elective courses

2024/2025 elective courses:

«Affine algebras»

Ph.D. S.A. Mironov (INR RAS, ITMP MSU)

«Introduction to Quantum Mechanics (with Elements of Mathematical Physics)»

PhD A.S. Anokhina (National Research Centre "Kurchatov Institute")

«Introduction to Gravitational Wave Physics»

Ph.D. S.R. Ramazanov (ITMP MSU)

«Quantum cosmology»

Doctor A.O. Barvinsky (ITMP, LPI)

Open Lectures by Visitors

2-6 April

1

Viktor Gorbenko,
Research Fellow at the Lausanne
Polytechnic University,
Switzerland.

“Quark Confinement or What is
a String” for 2nd-3rd year
students and “Quantum Field
Theory in Cosmology” for 5th
year students and above.

2

17-30 April

Andrey Parnachev,
Associate Professor, Trinity
College, Dublin, Ireland.

A series of lectures for 5th-6th
year students ‘Individual
chapters of AdS/CFT
correspondence”.

22 November - 22 December

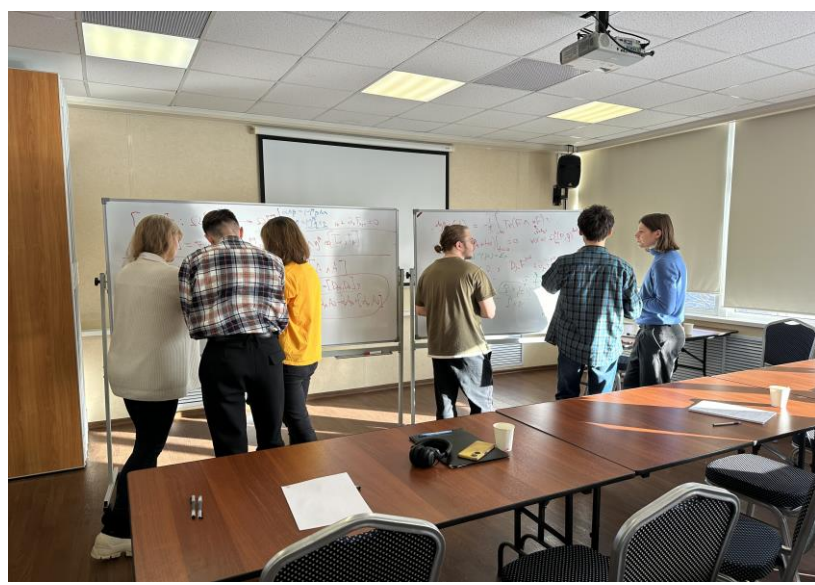
3

Fedor Popov,
Associate Research Professor at
the Simons Center for Geometry
and Physics, Stony Brook
University, USA.

A lecture course for 5th-year
students and above “Conformal
Field Theory”.

Additional Special Courses:

- «Functional integral, instantons and tunneling» - PhD D.G. Levkov (INR RAS, ITMP MSU)
- «Index Theorem and Characteristic Classes» - PhD F.Y. Popelensky (MSU Faculty of Mechanics and Mathematics)



ITMP Winter School on Theoretical and Mathematical Physics

Every year, students from leading universities apply to participate in the Winter School.

The Winter School offers a seven-day program of lectures and seminars on current research in theoretical and mathematical physics.

1

Participants

3-4 year students (MSU, MIPT, MEPhI, TSU, SFedU, etc.)

2

Format

7 days: lectures, seminars, reports.

3

Place

An off-site event in the Moscow region.

4

Results

The best students are recommended for admission to the MSU Master's program.

In 2025, to mark the 270th anniversary of Moscow State University, 30 students participated in the winter school (January 27–February 4). Four students were recommended for the international master's program "Geometry and Quantum Fields."

Working Environment

10 rooms at MSU Lomonosov Building

The rooms are equipped with large whiteboards, multimedia equipment and video conferencing systems for discussions, presentations and online meetings.

Functional Equipment

All offices are equipped for staff work, scientific seminars, and classes within joint educational programs with faculties.

Communication and Discussion Space

In 2022, the corridor of block “Г” on the 7th floor was redecorated. It became possible to create a comfortable atmosphere and several additional areas for discussions and communication.

Exhibition Space

The exhibition of the Russian Geographical Society “Immense Russia” is regularly organized. Photo images are updated annually.

