

# **Steklov Mathematical Institute**



# MATHEMATICS IN RUSSIAN ACADEMY OF SCIENCES

**Russian Mathematical School starts  
with two great mathematicians born in Switzerland:**

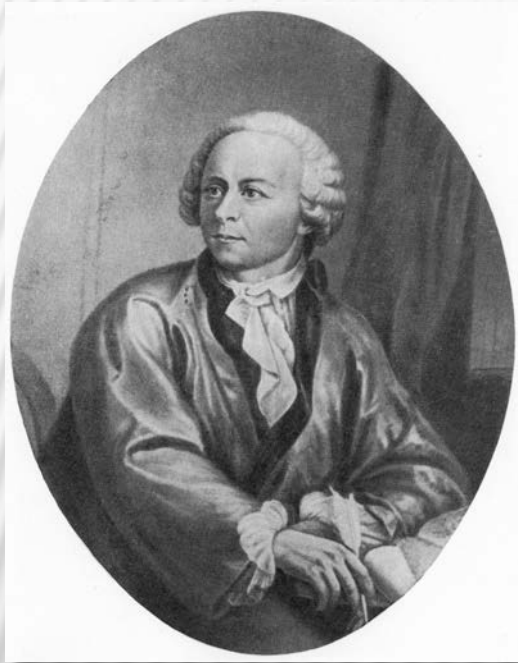


**Daniil Bernoulli (1700–1782)**



# MATHEMATICS IN RUSSIAN ACADEMY OF SCIENCES

and Leonard Euler (1707–1783)



# MATHEMATICS IN RUSSIAN ACADEMY OF SCIENCES

In XIXth century Russian Mathematical School starts to convert into one of leading European mathematical schools due to the efforts of Pafnutii Chebyshev (1821–1894) and



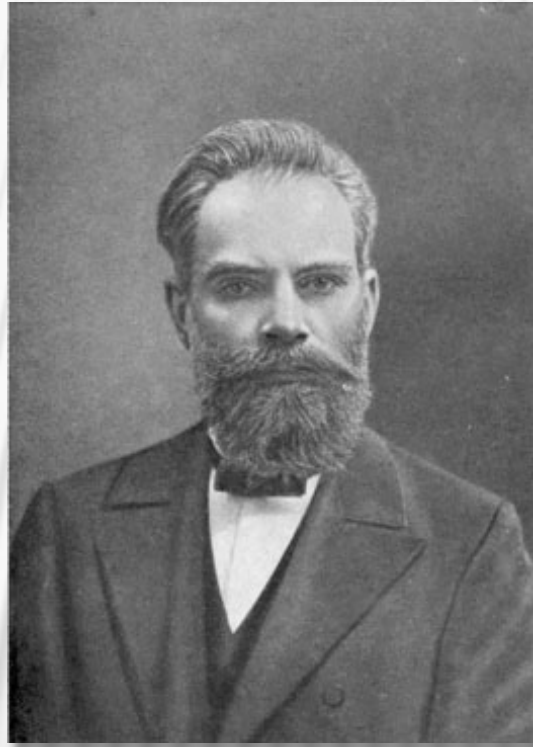
# MATHEMATICS IN RUSSIAN ACADEMY OF SCIENCES

his famous students Andrei Markov (1856–1922)



# MATHEMATICS IN RUSSIAN ACADEMY OF SCIENCES

and Alexander Lyapunov (1857–1918)

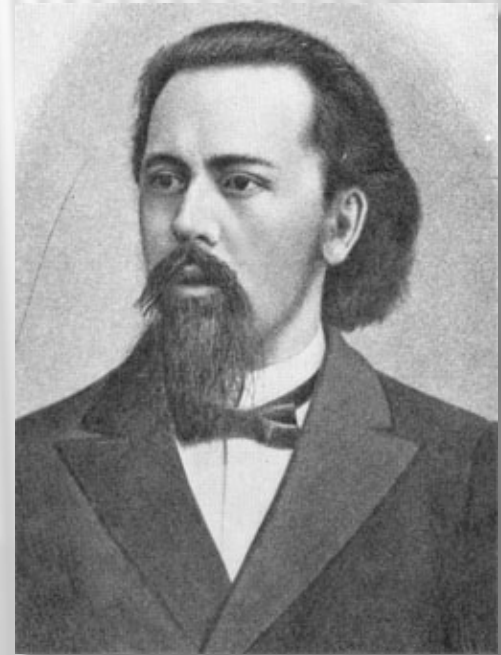




# MATHEMATICS IN RUSSIAN ACADEMY OF SCIENCES

In the beginning of revolutionary years and Citizen's war a great role in preservation and promotion of Russian Mathematical School was played by Vladimir Steklov (1863—1926), a student of Lyapunov, who was an outstanding mathematician and talented organizer.

During these hard years of Russian history he remained the only vice-president of RAS and mostly grace to his efforts the Academy was saved from dissolution and incorporated into a new Soviet system.



# PHYSICAL-MATHEMATICAL INSTITUTE

By initiative of Steklov in 1921 it was organized a new Physical-Mathematical Institute of RAS by merging of

- Mathematical Chair  
(organized by V.A. Steklov in 1919),
- Physical Laboratory  
(organized by P.P. Lazarev in 1912),
- Seismological Station.

Steklov became the first director of PMI.

In 1926 Steklov passed away  
and PMI got his name.





# STEKLOV MATHEMATICAL INSTITUTE



**I.M.Vinogradov**

In 1934 PMI moved into Moscow and simultaneously was split into two institutions: Steklov Mathematical Institute and Lebedev Physical institute of RAS. Ivan Vinogradov became the first director of Steklov Institute.

# STEKLOV MATHEMATICAL INSTITUTE

Here are some famous mathematicians from Steklov Institute:



**I.R. Shafarevich**



**Yu.I. Manin**



**L.S. Pontryagin**

I.R. Shafarevich is the founder of Moscow school of algebraic geometry.

Yu.I. Manin and V.A. Iskovskih solved the Lüroth problem on non-rationality of 3-dim quartics.

Pontryagin's maximum principle is a cornerstone in optimal control theory.

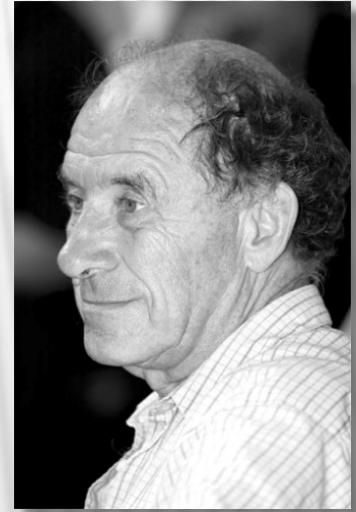
# STEKLOV MATHEMATICAL INSTITUTE



**P.S. Alexandrov**



**S.P. Novikov**



**V.I. Arnold**

P.S. Alexandrov is one of the founders of modern topology.

S.P. Novikov got Fields Prize for proving the topological invariance of rational Pontryagin classes.

V.I. Arnold is the founder of symplectic topology.



# STEKLOV MATHEMATICAL INSTITUTE



S.L. Sobolev



D.V. Anosov



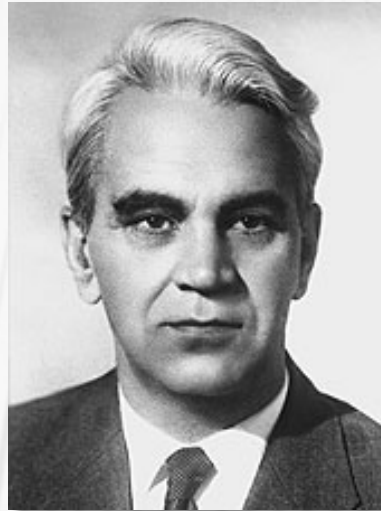
O.A. Ladyzhenskaya

S.L. Sobolev is one of the founders of distribution theory.  
D.V. Anosov started the hyperbolic theory of dynamical systems.

# STEKLOV MATHEMATICAL INSTITUTE



**A.N. Kolmogorov**



**M.V. Keldysh**



**M.A. Lavrentyev**

A.N. Kolmogorov laid down the axiomatics of probability theory.

M.V. Keldysh, the former president of RAS was one of the main persons in the program of space research.

M.A. Lavrentyev was a leading person in creating Novosibirsk scientific center.

# STEKLOV MATHEMATICAL INSTITUTE



**N.N. Luzin**



**S.N. Bernstein**



**I.M. Gelfand**

N.N. Luzin is a founder (together with D.F. Egorov) of Moscow Mathematical School.

S.N. Bernstein solved the 19th Hilbert problem on analyticity of solutions of Lagrange variational problem.

I.M. Gelfand is one of creators of the theory of commutative Banach algebras.



# STEKLOV MATHEMATICAL INSTITUTE



**L.V. Kantorovich**



**V.A. Fock**



**N.N. Bogolyubov**

L.V.Kantorovich got Nobel Prize for his works on mathematical economics.

V.A.Fock is one of the founders of quantum field theory (Fock spaces).

N.N.Bogolyubov is a creator of the microscopic theory of superconductivity and superfluidity.

# CREATING NEW MATHEMATICAL CENTERS

**Steklov Institute gave birth to many other mathematical centers of Russia such as:**

- 1. Ishlinsky Institute of Mechanics of RAS (1939),**
- 2. St.-Petersburg Department of Steklov Institute (1940),**
- 3. Dorodnitsyn Computer Center of RAS (1948),**
- 4. Ekaterinburg Institute of Mathematics of RAS (1956),**
- 5. Keldysh Institute of Applied Mathematics of RAS (1957).**

# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

**The current director  
of Steklov Institute is acad.  
V.V. Kozlov**





# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

**The scientific staff of SMI consists of 123 scientific members, including:**

- academicians and corresponding members of RAS – 25
- doctors of science – 58
- candidates of science – 34

# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

We have two monthly seminars for all members of the Institute:

- **“Mathematics and its applications”** on last achievements of the members of SMI,
- **“Mathematical Colloquium”**, organized by our young mathematicians, including introductory lectures.

Both seminars can be followed online and from archive.

Every year we organize around 20 conferences.



# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

Several years ago we have organized **Scientific Educational Center** of Steklov Institute where our mathematicians and invited guests deliver lecture courses in mathematics and its applications.



We have also created **Laboratory for Propaganda of Mathematics** aimed on spreading mathematical knowledge in the Society.



# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

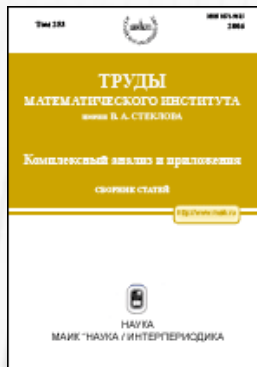
Our library contains a unique collection of private libraries inherited from our famous mathematicians V.A. Steklov, A.M. Lyapunov, A.A. Markov, N.N. Luzin and others.



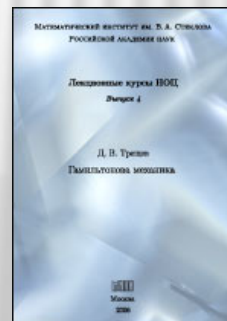
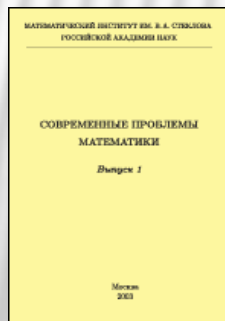


# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

We publish along with “Steklov Institute Proceedings”



also serial editions “Bulletin of Steklov Institute” (Russian title: “Contemporary Problems of Mathematics”) and “Lecture Courses of SEC”.



# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

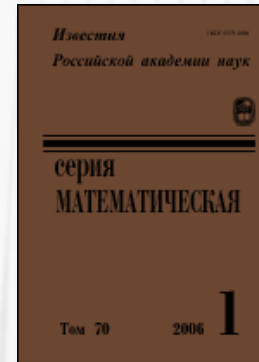
Steklov Institute is the founder of 8 mathematical journals:



Russian  
Mathematical  
Uspekhi



Sbornik: Mathematics



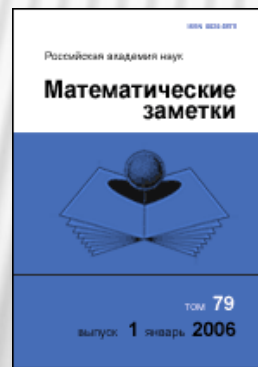
Izvestiya: Mathematics



Functional Analysis and  
its Applications



Theoretical and  
Mathematical Physics



Mathematical Notes



Probability Theory



Discrete Mathematics

# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

We have organized Department of Computer Networks and Informational Technologies which runs our local computer network and support the All-Russian Mathematical network: **Math-Net.Ru**

**Math-Net.Ru**

RUS ENG ЖУРНАЛЫ ПЕРСОНАЛИИ ОРГАНИЗАЦИИ КОНФЕРЕНЦИИ СЕМИНАРЫ ВИДЕОТЕКА ЛИЧНЫЙ КАБИНЕТ MathJax

**Общероссийский математический портал**

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**Журналы**

*Российская академия наук, Отделение математических наук*

- Алгебра и анализ
- Дискретная математика
- Журнал вычислительной математики и математической физики
- Известия Российской академии наук. Серия математическая
- Математические заметки
- Математический сборник
- Математическое моделирование
- Теоретическая и математическая физика
- Теория вероятностей и ее применения
- Успехи математических наук
- Функциональный анализ и его приложения

*Российская академия наук, Отделение физических наук*

- Письма в Журнал экспериментальной и теоретической физики
- Успехи физических наук

*Российская академия наук, Отделение нанотехнологий и информационных технологий*

- Информатика и ее применения
- Проблемы передачи информации

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**Ваша организация:**  
Математический институт им. В.А. Стеклова Российской академии наук

**Персональный вход:**  
Логин:

# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

During last 10 years our members obtained several prestigious awards:



V.I. Arnold – Russian State Prize and Shaw Prize



A.G. Kuznetsov – Russian State Prize for Young Scientists and European Prize for Young Mathematicians



S.Yu. Nemirovsky – European Prize for Young Mathematicians



A.A. Razborov – Nevanlinna Prize

Members of our Institute gave invited talks at all last International Congresses of Mathematicians.



# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

## Departments:

- Department of Algebra and Number Theory
- Department of Algebraic Geometry
- Department of Mathematical Logic
- Department of Geometry and Topology
- Department of Function Theory
- Department of Complex Analysis
- Department of Differential Equations
- Department of Mathematical Physics
- Department of Theoretical Physics
- Department of Mechanics
- Department of Probability Theory and Mathematical Statistics
- Department of Discrete Mathematics
- Department of Computer Networks and Information Technology
- Laboratory of Popularization and Promotion of Mathematics

# STEKLOV MATHEMATICAL INSTITUTE NOWADAYS

## Laboratory of Popularization and Promotion of Mathematics



N.N. Andreev – European Prize  
for Young Mathematicians



**THANK YOU FOR YOUR ATTENTION!**