

2026



中俄数学中心

SINO-RUSSIAN MATHEMATICS CENTER
КИТАЙСКО-РОССИЙСКИЙ МАТЕМАТИЧЕСКИЙ ЦЕНТР

HARBIN
ST. PETERSBURG

中俄数学中心A类基地（哈尔滨基地）揭牌仪式
UNVEILING CEREMONY OF THE HARBIN BASE OF THE
SINO-RUSSIAN MATHEMATICS CENTER (CATEGORY A)

哈尔滨-圣彼得堡数学论坛
HARBIN-SAINT PETERSBURG MATHEMATICS FORUM

会议手册
CONFERENCE BOOK

2026年10月29日-30日 中国·哈尔滨
October 29-30, 2026 Harbin, China

Unveiling Ceremony of the Harbin Base of the Sino-Russian Mathematics Center

Harbin-Saint Petersburg Mathematics Forum

The Harbin-Saint Petersburg Mathematics Forum will be held at the Sino-Russian Joint Campus of Harbin Institute of Technology from October 28 to 31, 2026, hosted by the Institute for Advanced Study in Mathematics at Harbin Institute of Technology. Arrival and registration will take place on October 28, and departure on October 31.

Venue

Sino-Russian Joint Campus, Harbin Institute of Technology

Contact

Xiao Xiong xxiong@hit.edu.cn

Mo Yan yanmo@hit.edu.cn

Timetable

Wednesday, October 28

Check-in: Orange Hotel (Harbin Institute of Technology Harbin Railway Station)

Thursday, October 29

09:15–09:30	Registration	
09:30–10:30	Opening Ceremony and Unveiling Ceremony	
10:50–11:30	Maxim Vsemirnov St. Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences	Hurwitz and $(2, 3)$ -generated groups: a survey
14:30–15:10	Sergei Kislyakov St. Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences	Isomorphism problems, averaging, and dominance for differential operators
15:20–16:00	Jinghao Huang Harbin Institute of Technology	Isometric embeddings of noncommutative L_p -spaces into noncommutative symmetric spaces
16:30–17:10	Olga Postnova Euler International Mathematical Institute, St. Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences	Asymptotical behaviour of Kronecker coefficients for S_N when $N \rightarrow \infty$

Friday, October 30

09:00–09:40	Bakhrom Omirov Harbin Institute of Technology	Cohomological Rigidity of Solvable Lie Algebras of Maximal Rank
10:10–10:50	Andrei Maliutin St. Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences	Generalizations of the Borsuk–Ulam, Hopf, and Lusternik–Schnirelmann Theorems
11:00–11:40	Ning Guo Harbin Institute of Technology	Purity theorems over valuation rings

Saturday, October 31

Departure

Thursday, October 29

Hurwitz and $(2, 3)$ -generated groups: a survey

Maxim Vsemirnov

10:50–11:30

St. Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences

A group is called $(2, 3)$ -generated if it can be generated by an involution and an element of order 3. The class of $(2, 3)$ -generated groups is of great interest because of its relation to the quotients of the modular group $PSL(2, Z)$. Hurwitz groups form an important subclass of $(2, 3)$ -generated groups. In my talk I shall discuss the history of the problem as well as recent progress.

Isomorphism problems, averaging, and dominance for differential operators

Sergei Kislyakov

14:30–15:10

St. Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences

It will be shown how the averaging method can significantly simplify the proofs of several well-known results on the isomorphic classification of spaces of smooth functions and establish new ones. The relationship between this range of problems and old results on domination for differential expressions will be clarified.

Isometric embeddings of noncommutative L_p -spaces into noncommutative symmetric spaces

Jinghao Huang

15:20–16:00

Harbin Institute of Technology

We establish a noncommutative version of a familiar Johnson–Maurey–Schechtman–Tzafriri Theorem, by showing that for any $0 < p < 2$ and a (not necessarily semifinite) von Neumann algebra $\mathcal{M}$ on a separable Hilbert space, if a symmetric quasi-Banach function space $E(0, 1)$ contains the function $t \mapsto t^{-1/p}$, $0 < t \leq 1$, then there exists a noncommutative probability space $(\mathcal{N}, \sigma)$ such that $L_p(\mathcal{M})$ is isometric to a subspace of $E(\mathcal{N}, \sigma)$. In particular, this answers two questions raised by Randrianantoanina in 2006.

Asymptotical behaviour of Kronecker coefficients for S_N when $N \rightarrow \infty$

Olga Postnova

16:30–17:10

*Euler International Mathematical Institute, St. Petersburg Department of Steklov Mathematical Institute,
Russian Academy of Sciences*

Using Schur–Weyl duality and the Weyl character formula we compute the asymptotical behaviour of tensor product multiplicities for representations of the symmetric group S_N as $N \rightarrow \infty$.

Friday, October 30

Cohomological Rigidity of Solvable Lie Algebras of Maximal Rank

Bakhrom Omirov

09:00–09:40

Harbin Institute of Technology

This talk is devoted to the adjoint cohomology of finite-dimensional complex solvable Lie algebras arising as maximal solvable extensions of nilpotent Lie algebras of maximal rank. For nilradicals with one-dimensional weight spaces, we establish sufficient conditions for the vanishing of the second adjoint cohomology group, extending the classical criterion of Leger and Luks. Our approach combines Hochschild–Serre factorization with an analysis of torus-invariant cocycles. Applications include maximal solvable extensions of model nilpotent Lie algebras and further cohomological rigidity criteria for rank-two nilradicals. We also prove that vanishing of adjoint cohomology in a finite range determined by the nilindex implies vanishing in every degree. Finally, we identify explicit weight configurations involving the center of the nilradical that ensure nontrivial second cohomology and yield lower bounds for its dimension.

Generalizations of the Borsuk–Ulam, Hopf, and Lusternik–Schnirelmann Theorems

Andrei Maliutin

10:10–10:50

St. Petersburg Department of Steklov Mathematical Institute, Russian Academy of Sciences

The Borsuk–Ulam theorem states that every continuous map from the n -dimensional sphere to n -dimensional Euclidean space maps some pair of antipodal points to the same point. This theorem belongs to a family of interrelated results that includes, among others, the Hopf and Lusternik–Schnirelmann theorems and the Tucker and Sperner lemmas. Some of these results admit generalizations related to the mountain-climbing lemma. The lecture will present these generalizations. (Joint work with Ilya Shirokov and Alisa Volkova.)

Purity theorems over valuation rings

Ning Guo

11:00–11:40

Harbin Institute of Technology

This talk presents recent results on purity theorems over valuation rings. We begin by investigating the Hartogs extension phenomenon for smooth algebras over valuation rings. We then discuss Zariski–Nagata purity, focusing on finite étale covers.

To support these geometric results, we review how the homological characterization of normal coherent rings, such as Serre’s (R_1) and (S_2) conditions, can be formulated using homological invariants like depth and weak dimension in the coherent, non-Noetherian setting.

Finally, we analyze cohomological purity, specifically establishing the purity of Brauer groups for syntomic algebras over valuation rings by using perfectoid techniques of Česnavicius–Scholze.



中俄数学中心

SINO-RUSSIAN MATHEMATICS CENTER
КИТАЙСКО-РОССИЙСКИЙ МАТЕМАТИЧЕСКИЙ ЦЕНТР