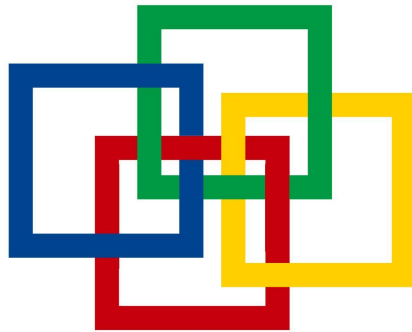


**The 9<sup>th</sup> China-Russia Conference**  
**on**  
**Knot Theory and Related Topics**



**August 15-19, 2023**

**Jilin University**

**Sino-Russian Mathematics Center**



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# The 9th China-Russia Conference on Knot Theory and Related Topics

## Schedule (GMT+8, Beijing)

Aug 16, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

Time	Speaker	Title	Chair
08:30-08:50	Opening Speeches and Group Photo		
08:50-09:40	Andrei Vesnin	Invariants of spatial graphs and associated links	Zhiyun Cheng
09:50-10:40	Tianyu Yuan	Morse theory of symmetric products	Zhiyun Cheng
10:40-11:00	<b>Tea Break</b>		
11:00-11:50	Zhiqing Yang	Graded knot polynomials	Zhiyun Cheng
12:00	<b>Lunch</b>		

14:00-14:50	Igor Nikonov	On topological interpretation of universal parity-like labellings	Nikolay Abrosimov
15:00-15:50	Andrei Malyutin	Generalizations of Artin's theorem on isotopic closed braids	Nikolay Abrosimov
15:50-16:10	<b>Tea Break</b>		
16:10-17:00	Evgeny Fominykh	Minimal ideal triangulations of 3-manifolds	Zhiqing Yang
17:10-17:35	Vuong Huu Bao	Twisted Alexander polynomial of knots in 3-torus	Zhiqing Yang
17:35-18:00	Roman Drybas	Ideal tetrahedra, photography principle and invariants of manifolds	Zhiqing Yang
18:00	<b>Dinner</b>		

Aug 17, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

Time	Speaker	Title	Chair
08:50-09:40	Shengmao Zhu	On the asymptotic expansion for the colored Jones polynomial of twist knots	Jiajun Wang
09:50-10:40	Qingtao Chen	Recent progress of original Volume Conjecture and its generalizations	Jiajun Wang
10:40-11:00	<b>Tea Break</b>		
11:00-11:50	Nikolay Abrosimov	Euclidean volume of a cone manifold over a hyperbolic knot is always an algebraic number	Jiajun Wang
12:00	<b>Lunch</b>		

14:00-14:50	Philipp Korablev	Modular category with two simple objects and corresponding invariants of links and 3-manifolds	Seongjeong Kim
15:00-15:50	Vassily Manturov	The photography method	Seongjeong Kim
15:50-16:10	<b>Tea Break</b>		
16:10-16:35	Ziyi Lei	A Categorification for the Signed Chromatic Polynomial	Xiao Wang
16:35-17:00	Andrei Egorov	Upper bounds for the volumes of hyperbolic polyhedra and links	Xiao Wang
17:10-17:35	Maxim Ivanov	Virtual knot groups and circular orderability	Xiao Wang
17:35-18:00	Liliya Grunvald	The number of rooted forests in a circulant graph	Xiao Wang
18:00	<b>Dinner</b>		

Aug 18, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

<b>Time</b>	<b>Speaker</b>	<b>Title</b>	<b>Chair</b>
08:50-09:40	Shijie Gu	Hypoabelian knot group and its interaction with exotic contractible manifolds	Andrei Vesnin
09:50-10:40	Zhongtao Wu	Alexander polynomial of spatial graph	Andrei Vesnin
10:40-11:00	<b>Tea Break</b>		
11:00-11:50	Valeriy Bardakov	Yang-Baxter equation, relative Rota-Baxter operators and skew braces	Andrei Vesnin
12:00	<b>Lunch</b>		

14:00-18:00	<b>Free Discussions</b>		
18:00	<b>Dinner</b>		

## The 9th China-Russia Conference on Knot Theory and Related Topics

### Schedule (GMT+7, Novosibirsk)

Aug 16, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

Time	Speaker	Title	Chair
07:30-07:50	Opening Speeches and Group Photo		
07:50-08:40	Andrei Vesnin	Invariants of spatial graphs and associated links	Zhiyun Cheng
08:50-09:40	Tianyu Yuan	Morse theory of symmetric products	Zhiyun Cheng
09:40-10:00	<b>Tea Break</b>		
10:00-10:50	Zhiqing Yang	Graded knot polynomials	Zhiyun Cheng
11:00	<b>Lunch</b>		

13:00-13:50	Igor Nikonov	On topological interpretation of universal parity-like labellings	Nikolay Abrosimov
14:00-14:50	Andrei Malyutin	Generalizations of Artin's theorem on isotopic closed braids	Nikolay Abrosimov
14:50-15:10	<b>Tea Break</b>		
15:10-16:00	Evgeny Fominykh	Minimal ideal triangulations of 3-manifolds	Zhiqing Yang
16:10-16:35	Vuong Huu Bao	Twisted Alexander polynomial of knots in 3-torus	Zhiqing Yang
16:35-17:00	Roman Drybas	Ideal tetrahedra, photography principle and invariants of manifolds	Zhiqing Yang
17:00	<b>Dinner</b>		

Aug 17, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

Time	Speaker	Title	Chair
07:50-08:40	Shengmao Zhu	On the asymptotic expansion for the colored Jones polynomial of twist knots	Jiajun Wang
08:50-09:40	Qingtao Chen	Recent progress of original Volume Conjecture and its generalizations	Jiajun Wang
09:40-10:00	<b>Tea Break</b>		
10:00-10:50	Nikolay Abrosimov	Euclidean volume of a cone manifold over a hyperbolic knot is always an algebraic number	Jiajun Wang
11:00	<b>Lunch</b>		

13:00-13:50	Philipp Korablev	Modular category with two simple objects and corresponding invariants of links and 3-manifolds	Seongjeong Kim
14:00-14:50	Vassily Manturov	The photography method	Seongjeong Kim
14:50-15:10	<b>Tea Break</b>		
15:10-15:35	Ziyi Lei	A Categorification for the Signed Chromatic Polynomial	Xiao Wang
15:35-16:00	Andrei Egorov	Upper bounds for the volumes of hyperbolic polyhedra and links	Xiao Wang
16:10-16:35	Maxim Ivanov	Virtual knot groups and circular orderability	Xiao Wang
16:35-17:00	Liliya Grunvald	The number of rooted forests in a circulant graph	Xiao Wang
17:00	<b>Dinner</b>		



Aug 18, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

<b>Time</b>	<b>Speaker</b>	<b>Title</b>	<b>Chair</b>
07:50-08:40	Shijie Gu	Hypoabelian knot group and its interaction with exotic contractible manifolds	Andrei Vesnin
08:50-09:40	Zhongtao Wu	Alexander polynomial of spatial graph	Andrei Vesnin
09:40-10:00	<b>Tea Break</b>		
10:00-10:50	Valeriy Bardakov	Yang-Baxter equation, relative Rota-Baxter operators and skew braces	Andrei Vesnin
11:00	<b>Lunch</b>		

13:00-17:00	<b>Free Discussions</b>		
17:00	<b>Dinner</b>		

## The 9th China-Russia Conference on Knot Theory and Related Topics

### Schedule (GMT+3, Moscow)

Aug 16, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

Time	Speaker	Title	Chair
03:30-03:50	Opening Speeches and Group Photo		
03:50-04:40	Andrei Vesnin	Invariants of spatial graphs and associated links	Zhiyun Cheng
04:50-05:40	Tianyu Yuan	Morse theory of symmetric products	Zhiyun Cheng
05:40-06:00	<b>Tea Break</b>		
06:00-06:50	Zhiqing Yang	Graded knot polynomials	Zhiyun Cheng
07:00	<b>Lunch</b>		

09:00-09:50	Igor Nikonov	On topological interpretation of universal parity-like labellings	Nikolay Abrosimov
10:00-10:50	Andrei Malyutin	Generalizations of Artin's theorem on isotopic closed braids	Nikolay Abrosimov
10:50-11:10	<b>Tea Break</b>		
11:10-12:00	Evgeny Fominykh	Minimal ideal triangulations of 3-manifolds	Zhiqing Yang
12:10-12:35	Vuong Huu Bao	Twisted Alexander polynomial of knots in 3-torus	Zhiqing Yang
12:35-13:00	Roman Drybas	Ideal tetrahedra, photography principle and invariants of manifolds	Zhiqing Yang
13:00	<b>Dinner</b>		

Aug 17, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

Time	Speaker	Title	Chair
03:50-04:40	Shengmao Zhu	On the asymptotic expansion for the colored Jones polynomial of twist knots	Jiajun Wang
04:50-05:40	Qingtao Chen	Recent progress of original Volume Conjecture and its generalizations	Jiajun Wang
05:40-06:00	<b>Tea Break</b>		
06:00-06:50	Nikolay Abrosimov	Euclidean volume of a cone manifold over a hyperbolic knot is always an algebraic number	Jiajun Wang
07:00	<b>Lunch</b>		

09:00-09:50	Philipp Korablev	Modular category with two simple objects and corresponding invariants of links and 3-manifolds	Seongjeong Kim
10:00-10:50	Vassily Manturov	The photography method	Seongjeong Kim
10:50-11:10	<b>Tea Break</b>		
11:10-11:35	Ziyi Lei	A Categorification for the Signed Chromatic Polynomial	Xiao Wang
11:35-12:00	Andrei Egorov	Upper bounds for the volumes of hyperbolic polyhedra and links	Xiao Wang
12:10-12:35	Maxim Ivanov	Virtual knot groups and circular orderability	Xiao Wang
12:35-13:00	Liliya Grunvald	The number of rooted forests in a circulant graph	Xiao Wang
13:00	<b>Dinner</b>		

Aug 18, 2023 (Zhengxin Building 209. ZOOM: 89331384591; Code: 143467)

<b>Time</b>	<b>Speaker</b>	<b>Title</b>	<b>Chair</b>
03:50-04:40	Shijie Gu	Hypoabelian knot group and its interaction with exotic contractible manifolds	Andrei Vesnin
04:50-05:40	Zhongtao Wu	Alexander polynomial of spatial graph	Andrei Vesnin
05:40-06:00	<b>Tea Break</b>		
06:00-06:50	Valeriy Bardakov	Yang-Baxter equation, relative Rota-Baxter operators and skew braces	Andrei Vesnin
07:00	<b>Lunch</b>		

09:00-13:00	<b>Free Discussions</b>		
13:00	<b>Dinner</b>		

## Titles & Abstracts

### **Nikolay Abrosimov**

Tomsk State University, Tomsk; Sobolev Institute of Mathematics, Novosibirsk

**Title:** Euclidean volume of a cone manifold over a hyperbolic knot is always an algebraic number

**Abstract:** The hyperbolic structure on a 3-dimensional cone-manifold with a knot as singularity can often be deformed into a limiting Euclidean structure. In the present work [1] we show that the respective normalised Euclidean volume is always an algebraic number, which is reminiscent of Sabitov's theorem (the Bellows Conjecture). This fact also stands in contrast to hyperbolic volumes whose number-theoretic nature is usually quite complicated. This is a joint work with Alexander Kolpakov and Alexander Mednykh.

References:

[1] N. Abrosimov, A. Kolpakov, A. Mednykh, Euclidean volumes of hyperbolic knots // Proceedings of AMS, 2023 (in press). DOI: 10.1090/proc/16353

### **Vuong Huu Bao**

Tomsk State University, Tomsk

**Title:** Twisted Alexander polynomial of knots in 3-torus

**Abstract:** This work is on some aspects of knots and links in three-dimensional torus. We consider the classical three-dimensional torus as quotient of a cube with identification of boundary faces. We study a diagrammatic approach for knots and links in the torus. We obtain a complete finite set of Reidemeister type moves for equivalence up to ambient isotopy. A presentation of fundamental group for the complement of a link in three-dimensional torus is given. Using Fox calculus, we obtain an algorithm, computing twisted Alexander polynomial for knots in 3-torus

### **Valeriy Bardakov**

Tomsk State University, Tomsk; Sobolev Institute of Mathematics, Novosibirsk

**Title:** Yang-Baxter equation, relative Rota-Baxter operators and skew braces

**Abstract:** The Yang-Baxter equation (YBE) is a fundamental equation in mathematical physics that arises in quantum groups. It has applications in the study of exactly solvable models in statistical mechanics and quantum field theory, and has connections to knot theory and braid groups. In my talk I discuss connection the YBE with some algebraic systems. In particular, with skew braces, post-groups, Rota-Baxter operators and relative Rota-Baxter operators on groups. The last objects for groups were introduced in papers of Chinese mathematicians: Chengming Bai, Li Guo, H. Lang, Yunhe Sheng, Rong Tang.

## **Qingtao Chen**

NYU Abu Dhabi

**Title:** Recent progress of original Volume Conjecture and its generalizations

**Abstract:** The original Volume Conjecture of Kashaev-Murakami-Murakami predicts a precise relation between the asymptotics of the colored Jones polynomials of a knot in  $S^3$  and the hyperbolic volume of its complement.

I will first discuss two different directions that lead to generalizations of this conjecture. The first direction concerns different quantum invariants of knots, arising from the colored  $SU(n)$  (with the colored Jones polynomial corresponding to the case  $n = 2$ ). I will first display subtle relations between congruence relations, cyclotomic expansions and the original Volume Conjecture for colored Jones polynomials of knots. I will then generalize this point of view to the colored  $SU(n)$  invariant of knots. Certain congruence relations for colored  $SU(n)$  invariants, discovered in joint work with K. Liu, P. Peng and S. Zhu, lead us to formulate cyclotomic expansions and a Volume Conjecture for these colored  $SU(n)$  invariants. In 2021, joint with K. Liu and S. Zhu, we proved cyclotomic expansion for the colored  $SU(n)$  invariants of double twist knots. I will also discuss similar ideas for the superpolynomials that arise in HOMFLY-PT homology. In fact, I proposed cyclotomic expansion conjectures and Volume conjectures for superpolynomials.

Another direction for generalization involves the Witten-Reshetikhin-Turaev and the Turaev-Viro quantum invariants of 3-manifolds. In a joint work with T. Yang, we formulated a new Volume Conjecture for the asymptotics of these 3-manifolds invariants evaluated at certain roots of unit, and numerically checked it for many examples. Interestingly, this conjecture uses roots of unity that are different from the one usually considered in literature. This may indicate that the understanding of this new phenomenon requires new physical and geometric interpretations that go beyond the usual quantum Chern-Simons theory. I will also introduce a work on Krillov-Reshetikhin quantum  $6j$ -symbols done by J. Murakami & me.

Finally I will explain how we prove the original Volume Conjecture for twist knots  $K_{\{p\}}$  with  $p \geq 6$ . This is a recent joint work Shengmao Zhu.

## **Roman Drybas**

Moscow Institute of Physics and Technology

**Title:** Ideal tetrahedra, photography principle and invariants of manifolds

**Abstract:** We apply the photography principle for hyperbolic 2-3 Pachner move to construct invariants of 4-manifolds.

**Andrei Egorov**

Sobolev Institute of Mathematics, Novosibirsk

**Title:** Upper bounds for the volumes of hyperbolic polyhedra and links

**Abstract:** By virtue of Belletti's theorem, the upper exact bound for volumes of generalized hyperbolic polyhedra having the same 1-skeleton  $G$  is achieved on an ideal right-angled polyhedron whose 1-skeleton is the medial graph of the graph  $G$ . We will talk about the volume estimates for generalized hyperbolic polyhedra that can be obtained using this result. Also, we will talk about new upper bounds for the volumes of hyperbolic links in terms of the number of twists in the diagram.

**Evgeny Fominykh**

Saint Petersburg University

**Title:** Minimal ideal triangulations of 3-manifolds

**Abstract:** Recent developments in the theory of complexity for 3-manifolds are reviewed. New methods for computing complexity are described, based on calculation of the Turaev-Viro invariants and homologies of 3-manifolds. This research was supported by the Russian Science Foundation under project no. 22-21-00747.

**Liliya Grunwald**

Sobolev Institute of Mathematics, Novosibirsk

**Title:** The number of rooted forests in a circulant graph

**Abstract:** In the paper [1], we develop a new method to produce explicit formulas for the number  $f_G(n)$  of rooted spanning forests in the circulant graphs  $G = C_n(s_1, s_2, \dots, s_k)$  and  $G = C_{2n}(s_1, s_2, \dots, s_k, n)$ . These formulas are expressed through Chebyshev polynomials. We prove that in both cases the number of rooted spanning forests can be represented in the form  $f_{G(n)} = p a(n)^2$ , where  $a(n)$  is an integer sequence and  $p$  is a certain natural number depending on the parity of  $n$ . Finally, we find an asymptotic formula for  $f_{G(n)}$  through the Mahler measure of the associated Laurent polynomial. This is joint work with Ilya Mednykh.

References:

[1] L. Grunwald, I. Mednykh, The number of rooted forests in circulant graphs // *Ars Mathematica Contemporanea*, 22 (2022) #P4.10. DOI: 10.26493/1855-3974.2029.01d

**Shijie Gu**

Northeastern University

**Title:** Hypoabelian knot group and its interaction with exotic contractible manifolds

**Abstract:** A group is said to be hypoabelian if it contains no nontrivial perfect subgroup. In this talk, we will introduce knot groups which are hypoabelian. As an application, we will use hypoabelian knot groups to understand the behavior of fundamental groups at infinity of exotic contractible manifolds.

**Maxim Ivanov**

Sobolev Institute of Mathematics, Novosibirsk

**Title:** Virtual knot groups and circular orderability

**Abstract:** A group  $G$  is called left-orderable if there is a total order on  $G$  that is invariant under left multiplication. All classical knot groups are left-orderable by the famous theorem of Howie and Short. We will discuss left-orderability of virtual knot group and a weaker property of circular orderability.

**Philipp Korablev**

Chelyabinsk State University, Chelyabinsk

N.N. Krasovskii Institute of Mathematics and Mechanics of the UB RAS, Ekaterinburg

**Title:** Modular category with two simple objects and corresponding invariants of links and 3-manifolds

**Abstract:** In this talk we will describe the modular category  $E$  with two simple objects. This category is not new. It often appears as the simplest modular category with non-trivial associativity isomorphisms. We will explicitly describe all necessary structural morphisms (braiding, twist and duality) in this category. Then we will use the Turaev functor to extract invariants for non-oriented links in 3-sphere and closed 3-manifolds. As an example, we will obtain an explicit formula for the value of this invariant for lens spaces. Next, we will use a well-known procedure to extract a Turaev - Viro type invariant from category  $E$ . Finally, we will show that this invariant coincides with the well-known epsilon invariant for 3-manifolds.

**Ziyi Lei**

Beijing Normal University

**Title:** A Categorification for the Signed Chromatic Polynomial

**Abstract:** By coloring a signed graph by signed colors, one obtains the signed chromatic polynomial of the signed graph. For each signed graph we construct graded cohomology groups whose graded Euler characteristic yields the signed chromatic polynomial of the signed graph. We show that the cohomology groups satisfy a long exact sequence which categorifies the signed deletion-contraction rule. This work is motivated by Helme-Guizon and Rong's construction of the categorification for the chromatic polynomial of unsigned graphs.

**Andrei Malyutin**

St. Petersburg Department of Steklov Mathematical Institute, St. Petersburg

**Title:** Generalizations of Artin's theorem on isotopic closed braids

**Abstract:** A classical theorem of braid theory dating back to Artin's works says that two closed braids in a solid torus are ambient isotopic if and only if they represent the same conjugacy class of the braid group. We obtain several generalizations of this theorem. In particular, we show that transversal links in an arbitrary compact orientable 3-manifold fibered over the circle with a compact fiber are ambient isotopic if and only if they are isotopic in the class of transversal links. These generalizations allow us to obtain new estimates for the number of knots with a given arc index.



**Vassily Manturov**

Moscow Institute of Physics and Technology

**Title:** The photography method

**Abstract:** We formulate a general method allowing one to

1) solve various equations

2) construct invariants of topological objects

by using some very general notion of data and data transmission law.

By data we mean, say, objects of geometric origin (lengths, areas, etc.), by data transmission law we mean some equations rewriting the data given in one system of coordinates in terms of some other system of coordinates (one key example is the Ptolemy equation).

Such considerations allow one to solve various equations "for free". We shall concentrate on obtaining invariants of braids 3-manifolds and 4-manifolds, solutions to the pentagon equations and representations of groups  $G_n^3$ .

This photography method ties together many branches in mathematics; in particular, our data transmission law is naturally related to see mutations in cluster algebras.

<https://arxiv.org/abs/2305.06316>

<https://arxiv.org/pdf/2305.11945.pdf>

<https://arxiv.org/abs/2306.07079>

<https://arxiv.org/abs/2307.03437>

**Igor Nikonov**

Lomonosov Moscow State University

**Title:** On topological interpretation of universal parity-like labellings

**Abstract:** Some labellings of crossings compatible with Reidemeister moves like the universal parity and the universal index admit topological interpretation (homological parity and homotopical index). In the talk we present some other examples of topological interpretation of universal labellings on knot diagrams in a fixed surface.

**Andrei Vesnin**

Tomsk State University, Tomsk

**Title:** Invariants of spatial graphs and associated links

**Abstract:** We will discuss spatial embeddings of graphs into the 3-sphere. Even a graph can be simple combinatorically, its embedding can be very complicated since any cycle of a graph will be embedded as a knot in the 3-sphere. Two spatial graphs are said to be equivalent if there is an ambient isotopy of the 3-sphere which transforms one spatial graph to another. As well as knots and links, spatial graphs can be studied from their diagrams. The Yamada and Jagger polynomials are most useful invariants of spatial graphs. Let  $K_4$  be the complete graph on 4 vertices. We will present a relation between normalized Jagger polynomials of spatial  $K_4$ -graph and its spatial subgraphs with Jones polynomial of the associated link. The obtained results are joint with O. Oshmarina.

**Zhongtao Wu**

The Chinese University of Hong Kong

**Title:** Alexander polynomial of spatial graph

**Abstract:** Alexander polynomial has been one of the most important tools in the development of knot theory since its discovery 100 years ago. For spatial graphs, Bao and the speaker defined an analogous invariant. In many aspects, the Alexander polynomial of spatial graphs shares similar topological properties with the classical one for knots; but it also contains certain unique graph theoretical information, such as, its evaluation at  $t=1$  gives the number of spanning trees of the graph. This talk aims to give a general introduction to this invariant.

**Zhiqing Yang**

Dalian University of Technology

**Title:** Graded knot polynomials

**Abstract:** Most knot polynomial invariants are not polynomial time computable. But after deforming the knot polynomial and dividing it according to certain grading, each component can be polynomial time computable. In this way, knot invariants that were previously very complex can now be calculated with their low-order components. This idea was applied to HOMFLY polynomial by mathematicians such as Jozef H. Przytycki, F. Jaeger, Akio Kawachi and others. This report generalizes this result, showing that the knot polynomial deformation they give is a special case of the reporter's knot invariant, and discusses more general possibilities.

**Tianyu Yuan**

Beijing International Center for Mathematical Research

**Title:** Morse theory of symmetric products

**Abstract:** We present an approach to do Morse theory on symmetric products of surfaces, and show its relation to higher-dimensional Heegaard Floer homology (HDHF). As an application, we recover the finite Hecke algebra by Morse theory. We also sketch the application to spectral networks. This is joint work with Ko Honda and Yin Tian.

**Shengmao Zhu**

Zhejiang Normal University

**Title:** On the asymptotic expansion for the colored Jones polynomials of twist knots

**Abstract:** In this talk, I will present an asymptotic expansion for the colored Jones polynomial for twist knots at the  $N+1/2$ -th roots of unity by using the saddle point method developed by Ohtsuki. As a corollary, we prove a version of volume conjecture proposed by Detcherry-Kalfagianni-Yang for twist knot  $K_p$  with  $p \geq 6$ . This is a joint work with Qingtao Chen.

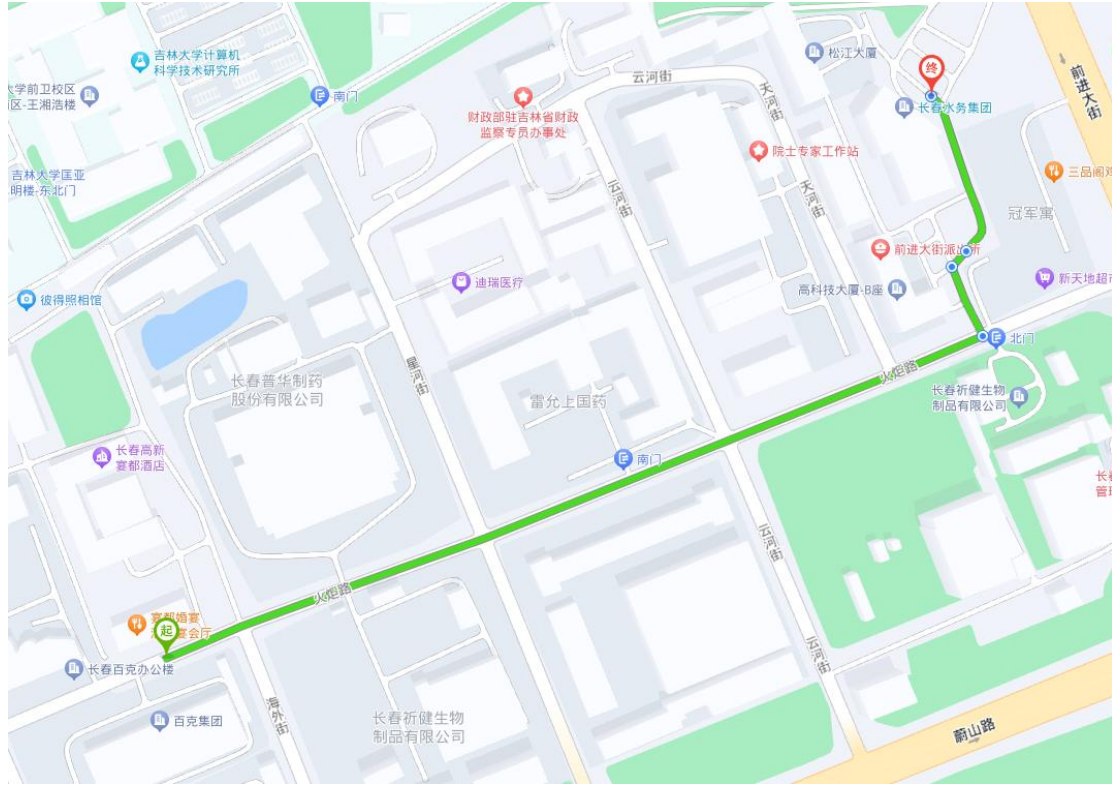
## Participants

Nikolay Abrosimov	Tomsk State University Sobolev Institute of Mathematics
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Ilya Alekseev	Saint Petersburg University
Vuong Huu Bao	Tomsk State University
Valeriy Bardakov	Tomsk State University, Sobolev Institute of Mathematics
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Dmitriy Drozdov	Novosibirsk State University
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Vladimir Evteev	Tomsk State University
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Pavel Sokolov	Novosibirsk State University
Galina Sokolova	Novosibirsk State University
Dongqi Sun	Harbin Engineering University
Andrei Vesnin	Tomsk State University and Sobolev Institute of Mathematics
Jiajun Wang	Peking University
Jun Wang	Hebei Normal University
Xiao Wang	Jilin University
Jianchun Wu	Soochow University
Zhongtao Wu	The Chinese University of Hong Kong
Mengjian Xu	Guangxi Normal University
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Tianyu Yuan	Beijing International Center for Mathematical Research
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Qiang Zhang	Xi'an Jiaotong University
Yimu Zhang	Jilin University
Shengmao Zhu	Zhejiang Normal University
Kseniya Zimireva	Novosibirsk State University
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# Maps and Directions

## Yandu Hotel to Zhengxin Building



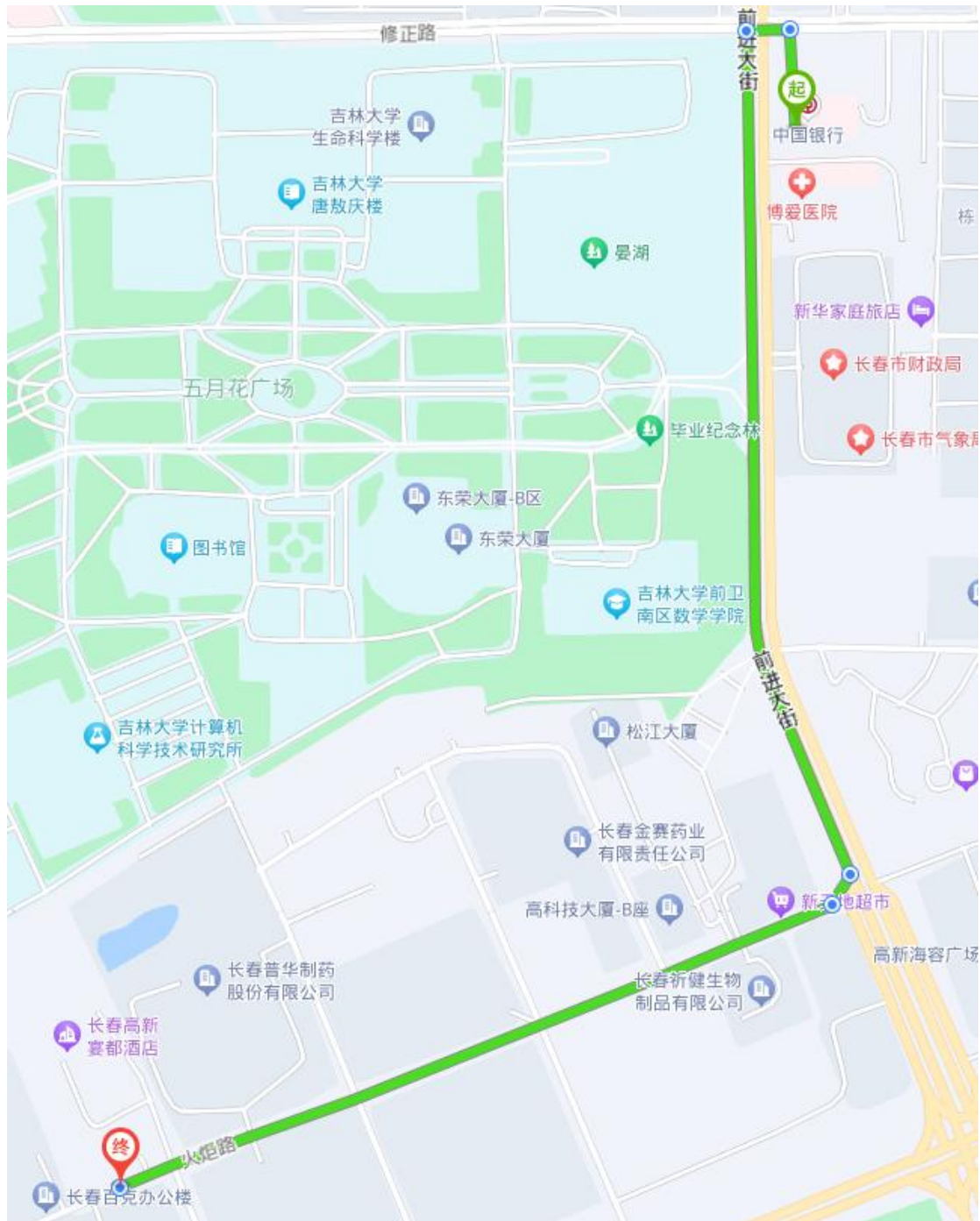
About 750 meters, 10mins by walk.

## Zhengxin Building to Danianchuyi



About 800 meters, 12mins by walk.

## Danianchuyi to Yandu Hotel



About 1.6 km, 25mins by walk.