北京大学数学科学学院中俄数学中心

Sino-Russian Mathematics Center, School of Mathematical Sciences, PKU

2026 北京非结合代数研讨会

2026 Beijing Workshop on Non-associative Algebras

会 议 手 册

Conference Handbook

2026 年 8 月 6 日 — 8 月 8 日

August 6 – 8, 2026

会议地点 · Venue

北京大学智华楼四元厅

Siyuan Hall, Zhihua Building, Peking University

Peking University · Beijing

会议信息

Conference Information

会议时间 Date	2026 年 8 月 6 日 — 8 月 8 日 · August 6 – 8, 2026（星期四 至 星期六）
会议地点 Venue	北京大学智华楼四元厅 Siyuan Hall, Zhihua Building, Peking University
主办方 Organizer	北京大学数学科学学院中俄数学中心、Ivan Kaygorodov 教授 Sino-Russian Mathematics Center, PKU & Prof. Ivan Kaygorodov
会议地址 Address	北京市海淀区颐和园路 5 号 北京大学智华楼 100871
会务负责人 Contact	沈健翔 手机 13269882105 邮箱 srmcsjx242@pku.edu.cn

交通与到达指引 · Travel and Access

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- **会议报到** 请与会人员携带身份证 / 护照原件入校（需原件），前往会场签到并领取会议资料。

会议主旨

Conference Theme

本次研讨会是 "非结合代数日"（Non-associative Algebra Day）系列会议的一部分。该系列首届会议曾先后在葡萄牙、西班牙、法国、希腊等多个欧洲大学举办。此后，随着全球对非结合代数研究兴趣的增长，会议版图逐步扩展至中国和乌兹别克斯坦。

本次研讨会汇聚了来自中国、俄罗斯、乌兹别克斯坦、美国、意大利、西班牙等国家和地区的二十余位学者，带来 20 余场专题学术报告，覆盖 Novikov 代数与 transposed Poisson 代数、Nijenhuis 代数与 Nijenhuis 双代数、pre-Lie 代数与 Hessian 代数、Yang-Baxter 方程及其广义推广、Jordan 超代数与 Lie 超代数的分类与形变、Rota-Baxter 系统与 Frobenius 代数、Virasoro 与共形代数、Poisson 顶点代数与 Lie 共形代数胚、Gelfand-Dorfman 代数、skew brace 的 Sylow 理论等非结合代数领域的前沿研究方向。

研讨会旨在促进中国、欧洲、俄罗斯和乌兹别克斯坦在该领域工作的科学家之间的经验交流，建立中国研究人员与外国同行之间紧密的国际联系，并在开放、互利合作的精神下推进学术合作与人才培养。同时，本次会议也将为中俄数学中心未来计划举办的大型非结合代数会议奠定基础，契合中心发展国际科研合作与共同繁荣的战略方向。

This workshop is part of the "Non-associative Algebra Day" series of conferences. The inaugural editions of this series were successively hosted at universities across Portugal, Spain, France and Greece. As global interest in non-associative algebras has grown, the geographic scope of the series has expanded to include China and Uzbekistan.

The workshop brings together more than twenty scholars from China, Russia, Uzbekistan, the United States, Italy,Spain and other countries and regions, featuring over twenty specialized academic talks. The topics span leading research directions in non-associative algebrasincluding Novikov algebras and transposed Poisson algebras, Nijenhuis algebras and Nijenhuis bialgebras, preLie algebras and Hessian algebras, the Yang–Baxter e quation and its generalizations, classification and deformation of Jordan and Lie superalgebras, Rota–Baxter sy stems and Frobenius algebras, Virasoro and conformal algebras, Poisson vertex algebras and Lie conformal alg ebroids, Gelfand–Dorfman algebras, Sylow theory of skew braces, and quantum Mishchenko–Fomenko algebras.

The workshop aims to facilitate the exchange of experience between scientists from China, Europe, Russia and Uzbekistan working in the field. It seeks to build close international connections between researchers in China and their foreign colleagues, and to advance academic cooperation and talent cultivation in a spirit of openness and mutual benefit. At the same time, this meeting is intended to lay the foundation for the larger non-associative algebra conference to be organised by the Sino-Russian Mathematics Center in the near future, well aligned with the strategic direction of the Center in promoting international scientific collaboration and common prosperity.

会议日程 · Day 1

Program · Thursday, August 6, 2026

2026 年 8 月 6 日（星期四）

时间 · Time	主持 · Chair	报告人 · Speaker
10:00 – 11:00	Andronick Arutyunov	Li Guo
11:00 – 12:00	Andronick Arutyunov	Chengming Bai
12:00 – 14:00	午餐 · Lunch	
14:00 – 15:00	Li Guo	Jorge J. Garcés
15:00 – 16:00	Li Guo	Andronick Arutyunov
16:00 – 16:30	茶歇 · Coffee Break	
16:30 – 17:00	Jorge J. Garcés	Azamat Saydaliyev
17:00 – 17:30	Jorge J. Garcés	Yuanyuan Zhang
17:30 – 18:00	Jorge J. Garcés	Jie Lin
18:00 – 18:30	Chengming Bai	Ziyi Zhang
18:30 – 19:00	Chengming Bai	Yuxiang Xiao

会议日程 · Day 2

Program · Friday, August 7, 2026

2026 年 8 月 7 日（星期五）

时间 · Time	主持 · Chair	报告人 · Speaker
10:00 – 11:00	Liming Tang	Maria Ferrara
11:00 – 12:00	Liming Tang	Georgy Sharygin
12:00 – 14:00	午餐 · Lunch	
14:00 – 15:00	Maria Ferrara	Yanyong Hong
15:00 – 16:00	Maria Ferrara	Liming Tang
16:00 – 16:30	茶歇 · Coffee Break	
16:30 – 17:00	Yanyong Hong	Zarina Shermatova
17:00 – 17:30	Yanyong Hong	Xiaosong Peng
17:30 – 18:00	Yanyong Hong	Yi Zhang
18:00 – 18:30	Georgy Sharygin	Yining Sun
18:30 – 19:00	Georgy Sharygin	Chengyang Lu

会议日程 · Day 3

Program · Saturday, August 8, 2026

2026 年 8 月 8 日（星期六）

时间 · Time	主持 · Chair	报告人 · Speaker
10:00 – 11:00	Jiefeng Liu	Yevhen Makedonskyi
11:00 – 12:00	Jiefeng Liu	Chenwei Ruan
12:00 – 14:00	午餐 · Lunch	
14:00 – 15:00	Yevhen Makedonskyi	Aliaksandr Hancharuk
15:00 – 16:00	Yevhen Makedonskyi	Jiefeng Liu
16:00 – 16:30	茶歇 · Coffee Break	
16:30 – 17:00	Aliaksandr Hancharuk	Abror Khudoyberdiyev
17:00 – 17:30	Aliaksandr Hancharuk	Baojin Zhang
17:30 – 18:00	Aliaksandr Hancharuk	Jiarou Jin
18:00 – 18:30	Chenwei Ruan	Zeyu Hao
18:30 – 19:00	Chenwei Ruan	Xiaohui Chi

报告题目与摘要

Titles and Abstracts

以下按讲者姓氏英文首字母顺序排列，共 27 场专题报告。
The following 27 talks are listed in alphabetical order by the speaker's last name.

Abror Khudoyberdiyev

Romanovsky Institute of Mathematics, Uzbekistan Academy of Sciences, Uzbekistan

The geometric classification of non-associative superalgebras

Abstract

In this talk, we present the classification of complex three-dimensional right alternative and noncommutative Jordan superalgebras. In particular, we classify three-dimensional Kokoris and standard superalgebras. Furthermore, by exploiting one-to-one correspondences between suitable classes of superalgebras, we derive classifications of generic Poisson–Jordan and generic Poisson superalgebras. As a consequence, we also obtain classifications of three-dimensional anticommutative superalgebras, three-dimensional perm superalgebras, binary perm superalgebras, associative superalgebras, binary associative superalgebras, (−1,1)-superalgebras, and binary (−1,1)-superalgebras.

Aliaksandr Hancharuk

Jilin University, China

Q-structures of singular spaces

Abstract

A singular foliation on a smooth manifold M gives rise to a Lie-∞ algebroid encoding its properties. On the other hand, a singular foliation generates a coisotropic ideal of C∞(T*M), to which a particular Poisson reduction — the Batalin–Fradkin–Vilkovisky (BFV) construction — is attributed. We explore algebraic analogs of these constructions and establish a link between them. This is based on joint work in progress with Alexei Kotov.

Andronick Arutyunov
Trapeznikov Institute of Control Sciences, Russian Academy of Sciences, Russia

A geometric approach to derivations in associative algebras

Abstract
The following approach has proved effective in the study of derivations of group algebras. To the operator identity defining the derivation one associates a graph whose vertices are the elements of the group. Derivations are then interpreted as functions on this graph subject to certain stabilization conditions at infinity. For ordinary derivations (the Leibniz rule) this yields a description of the derivation algebra: one singles out the ideal of quasi-inner derivations, whose quotient modulo inner derivations is controlled by the ends of the connected components of the graph, while the quotient by the quasi-inner ideal — the algebra of quasi-outer derivations — is described in terms of additive characters of centralizers. Analogous results hold for (σ,τ)-derivations, in particular for δ-derivations. It is noteworthy that the graph in question is an object of coarse nature. Recall that coarse geometry is an independent branch of mathematics studying the large-scale structure of spaces, with metric properties considered up to quasi-isometry and, more generally, coarse equivalence; it originates in geometric group theory and the Novikov-type conjectures. In our setting this makes it possible to compare the classes of derivations generated by different groups. The talk will present a generalization of this approach to arbitrary graphs: how the function spaces attached to the vertex sets transform under coarse equivalences of graphs. We will also discuss recent generalizations to algebras generated by inverse semigroups (the results are joint with R. Yu. Repeev). The guiding conjecture of this work is that for a wide class of associative algebras the derivation algebra admits a description of the following kind: one associates with the algebra a graph (or, more generally, a coarse space) together with a space of potentials — functions on the vertex set with prescribed stabilization at infinity — so that the ideal structure of the derivation algebra is read off from the coarse geometry of this space. In particular, the quotients of the corresponding ideals are expected to be coarse invariants, expressible in terms of function spaces on the Freudenthal boundary. Group algebras (with Leibniz, Fox and (σ,τ)-identities) and algebras generated by inverse semigroups provide supporting evidence; the case of general associative algebras remains open.

Azamat Saydaliyev
Romanovsky Institute of Mathematics, Uzbekistan Academy of Sciences, Uzbekistan

The geometric classification of Jordan superalgebras

Abstract
In this talk, I will present recent results on the algebraic and geometric classification of low-dimensional complex Jordan superalgebras. I will first discuss the complete algebraic and geometric classification of four-dimensional Jordan superalgebras, including the description of the irreducible components of the corresponding varieties. I will then present the complete classification of the irreducible components in the varieties of Jordan superalgebras of types (3,1) and (2,2), thereby resolving questions posed by Hernández, Martín, and Rodrigues.

Baojin Zhang
Harbin Normal University, China

The deformation of Lie superalgebras

Abstract
In this talk, we will present a study of the deformation and rigidity of Lie superalgebras over an algebraically closed field of characteristic zero. First, by constructing explicit even superderivations, we establish some sufficient conditions for the existence of non-trivial deformations of Lie superalgebras. Using these criteria, we prove that both Heisenberg Lie superalgebras and filiform Lie superalgebras admit non-trivial deformations. Next, from the viewpoint of the affine scheme of structure constants of Lie superalgebras, we establish a connection between second cohomology and the rigidity of points in the algebraic variety. Finally, as an application, we discuss the rigidity of free k-step nilpotent Lie superalgebras. This talk is based on a joint work with Liming Tang.

Chengming Bai
Nankai University, China

Novikov algebras and transposed Poisson algebras

Abstract
We first recall some facts on Novikov algebras and transposed Poisson algebras. Then we introduce the notions of the Novikov deformation of a commutative associative algebra and the corresponding classical limit. Such a classical limit belongs to a subclass of transposed Poisson algebras. As a direct consequence, we revisit the relationship between transposed Poisson algebras and Novikov-Poisson algebras due to the fact that there is a natural Novikov deformation of the commutative associative algebra in a Novikov-Poisson algebra.

Chengyang Lu
Hangzhou Normal University, China

Jacobi algebras and Jacobi Novikov-Poisson algebras

Abstract
In this talk, we introduce the notion of Jacobi Novikov-Poisson algebras and demonstrate that their affinization yields Jacobi algebras. We obtain some properties of Jacobi Novikov-Poisson algebras and provide classifications of low-dimensional Jacobi Novikov-Poisson algebras including those of dimensions 2 and 3 over C up to isomorphism. Several further constructions of Jacobi Novikov-Poisson algebras from existing ones are also presented. The notion of Frobenius Jacobi Novikov-Poisson algebras is introduced, and several equivalent characterizations are established in terms of quadratic structures and integrals. Classifications of quadratic Jacobi Novikov-Poisson algebras of dimensions 2 and 3 over C are given. Finally, we provide an explicit construction of Frobenius Jacobi algebras. This is a joint work with Yanyong Hong.

Chenwei Ruan
Beijing Institute of Mathematical Sciences and Applications (BIMSA), China

Freidel–Maillet type equations on fused K-matrices over the positive part of U_q(ŝl_2)

Abstract
The positive part U_q^+ of the quantized enveloping algebra U_q(ŝl_2) has a reflection equation presentation of Freidel–Maillet type (Baseilhac 2022). Its defining K-matrix has size 2×2 and can be expressed, using Rosso's embedding of U_q^+ into a q-shuffle algebra, as generating functions whose coefficients are Terwilliger's alternating PBW basis elements. This and older PBW bases of U_q^+ due to Damiani and Beck are unified by linear combinations of Catalan words (Ruan 2025). In this talk, we use this unification to define K-matrices of any dimension ≥ 2 whose entries are explicit generating functions over U_q^+. Our main result is that any pair of such K-matrices, possibly of different dimensions, satisfy a Freidel–Maillet type equation. This yields a family of algebraic relations over U_q^+ that generalize Baseilhac's equation and can be used to study integrable systems or higher-spin representations. This talk is based on arXiv:2305.11152 and arXiv:2512.00819.

Georgy Sharygin
Lomonosov Moscow State University, Russia

The Moyal product and quantum Mishchenko-Fomenko algebras in U(gl_n)

Abstract
A Mishchenko-Fomenko algebra (or the shift of invariants algebra) is a Poisson-commutative subalgebra A_ξ in the symmetric algebra of the Lie algebra g (with the Kirillov-Kostant structure) generated by the Taylor coefficients of the shifts of the central elements of the algebra S(g) in the direction of a fixed vector ξ. Quantum Mishchenko-Fomenko algebras are commutative subalgebras in the universal enveloping algebras that "cover" (in the sense of the Poincaré–Birkhoff–Witt theorem) the Mishchenko-Fomenko algebras in the corresponding symmetric algebras. In my talk, I will discuss another way to describe the generating elements of such algebras for the Lie algebra gl_n in terms of the Moyal multiplication on the symplectic space R^{n^2}.

Jiarou Jin
Hangzhou Normal University, China

Transposed Novikov-Poisson algebras

Abstract
In this talk, we introduce the definition of transposed Novikov-Poisson algebras, whose affinization are transposed Poisson algebras. Moreover, we show that there is a natural transposed Poisson algebra structure on the tensor product of a transposed Novikov-Poisson algebra and a right differential Novikov-Poisson algebra. A transposed Poisson algebra also naturally arises from a transposed Novikov-Poisson algebra by taking the commutator Lie algebra of the Novikov algebra. We show that the transposed Novikov-Poisson algebras are closed under taking tensor products. Moreover, transposed Novikov-Poisson algebras are closely related to 1/2-derivations of the associated Novikov algebras. By using 1/2-derivations, we show that there are non-trivial transposed Novikov-Poisson algebra structures on solvable Novikov algebras with some conditions. We also prove that if a transposed Novikov-Poisson algebra is simple, then the associated Novikov algebra is simple. Finally, we consider their nilpotency and solvability. This is a joint work with Yanyong Hong.

Jie Lin
Civil Aviation University of China, China

Transposed (δ-)Poisson structures on the algebras related to Virasoro-like algebra

Abstract
The Virasoro-like algebra, as a generalization of the Virasoro algebra, can be understood as a natural Lie algebraic object arising in mathematical physics and representation theory. In this talk, we investigate the transposed Poisson structures on the Virasoro-like algebra, its q-deformation, and related algebraic structures. We show that for the Virasoro-like algebra and the q-Virasoro-like algebras with q a root of unity, none of the aforementioned algebras admit nontrivial transposed Poisson structures. Additionally, we undertake a study of transposed δ-Poisson (super)algebra structures on the Virasoro-like algebra and its Kantor Lie-double — the latter being constructed via Kantor's procedure. This work leads to the finding that, whereas non-trivial δ-derivations exist solely at δ = 1, non-trivial transposed δ-Poisson (super)algebra structures are entirely absent. This is a joint work with Chengyu Liu and Jingjing Jiang.

Jiefeng Liu
Northeast Normal University, China

Lie conformal algebroids and Poisson vertex algebras

Abstract
This talk explores the connection between Lie conformal algebroids and Poisson vertex algebras. Poisson vertex algebras are classical limits of vertex algebras, governing Hamiltonian PDEs. Lie conformal algebroids generalize Lie algebroids to the conformal setting. We show that the space of Kähler differentials over a Poisson vertex algebra carries a natural Lie conformal algebroid structure. The main result is a cohomology isomorphism between these two objects. We also discuss examples and cohomological applications.

Jorge J. Garcés
National Distance Education University, Spain

Some new and old results on linear maps

Abstract
We shall present some new and old results on linear maps that (in some sense) behave as a Jordan homomorphism or a Jordan derivation locally. More generally, by paralleling the theory of Jordan zero-product determined algebras, we study von Neumann algebras that are square-zero determined or determined by Jordan products at a fixed point and show that all properly infinite von Neumann factors are both square-zero determined and determined by Jordan zero-products at any fixed point. Finally, we shall discuss a generalisation of these results to more general classes of von Neumann algebras. Part of the results of this talk are from a joint work with Mykola Khrypchenko.

Li Guo
Rutgers University–Newark, USA

Induced structures of operated algebras

Abstract
In recent years, a lot of attention has been attracted to operated algebras, defined to be algebras equipped with various linear operators, such as derivations and Rota-Baxter operators. An important aspect in their study is that they induce new algebraic structures defined by binary quadratic relations. For example, a differential commutative algebra induces a Novikov algebra and a Rota-Baxter Lie algebra induces a pre-Lie algebra or a post-Lie algebra. While these new structures are important, the meaning of "being induced" has been informal. This talk presents a general framework to define and understand such induced structures. The talk is based on joint works with Shiyuan Huang, Shanghua Zheng, Xiaoyan Wang and Huhu Zhang.

Liming Tang
Harbin Normal University, China

Invariant rings of Lie superalgebras of Cartan type

Abstract
Let L be a Cartan type Lie superalgebra over an algebraically closed field F of characteristic p > 3, and G denote the automorphism group of L. We prove that there are no nontrivial invariants of L under the coadjoint action, i.e., F[L*]^G = F.

Maria Ferrara
Pegaso University, Italy

Sylow theory for finite skew braces

Abstract
In this talk, we present an overview of Sylow theory in the context of finite skew braces, showing how classical results from finite group theory can be generalized in this setting.

Xiaohui Chi
Harbin Normal University, China

The universal enveloping algebra and restricted structure for Lie-Rinehart color algebras

Abstract
In this talk, we will first present the fundamental notion of Lie-Rinehart color algebras, and introduce their universal enveloping algebras and core properties. We then introduce the Poincaré–Birkhoff–Witt (PBW) theorem and relevant conclusions for Lie-Rinehart color algebras. Subsequently, we introduce the notion of restricted Lie-Rinehart color algebra over a field of characteristic p > 3, motivated by a generalization of Hochschild's lemma to the theoretical framework of even-graded color algebras. Building on this foundation, we characterize several properties of p-mappings on restricted Lie-Rinehart color algebras, and carry out research on a series of problems related to the restricted structure. This talk is based on a joint work with Liming Tang.

Xiaosong Peng
Jiangsu Normal University, China

Nijenhuis modules and the ring of Nijenhuis operators

Abstract
In this talk, we study the Nijenhuis modules of Nijenhuis algebras. We introduce the concept of free, projective, injective and flat Nijenhuis modules. We give a construction of free Nijenhuis modules. The ring of Nijenhuis operators is also introduced and the relationship between Nijenhuis modules and the modules of the ring of Nijenhuis operators is established. Finally, we show that there are enough projective, injective and flat Nijenhuis modules in the category of Nijenhuis modules. This is a joint work with Zhang Shilong and Dong Liuqing.

Yanyong Hong
Hangzhou Normal University, China

Generalized conformal modules over the Virasoro conformal algebra

Abstract
In this talk, we initiate a systematic study of generalized conformal modules over the Virasoro conformal algebra Vir, a notion originally defined by V. Kac but largely unexplored in the literature. First, we present a twisted construction that produces new generalized conformal modules over any Lie conformal algebra from existing conformal modules. Then we give a complete classification of non-trivial generalized conformal modules over Vir that are free of rank one over C[∂], and show that they are precisely those obtained from rank-one conformal modules via the twisted construction. As an application, we classify all W_1-modules that are free of rank one over C[L_{−1}], with explicit actions expressed in terms of Bell polynomials. Furthermore, we develop a matrix exponential construction that yields irreducible generalized conformal modules over Vir of arbitrary finite rank, revealing a striking phenomenon with no analogue in the conformal setting. We also construct and classify a family of infinite torsion generalized conformal modules over Vir, which are non-trivial and irreducible under suitable conditions. This is based on a joint work with Henan Wu.

Yevhen Makedonskyi
Beijing Institute of Mathematical Sciences and Applications (BIMSA), China

Fusion product of local Weyl modules

Abstract
In the current talk I will explain the joint work with Anton Khoroshkin where we study a class of modules over current algebra in two variables. These modules are constructed by Feigin–Loktev tensor product of two local Weyl modules corresponding to the one-component partitions. We explain the structure of these modules in terms of Naoi's generalized Demazure modules and prove some Ext-vanishing properties.

Yi Zhang
Nanjing University of Information Science and Technology, China

A monoidal categorical approach to augmented Rota-Baxter algebras and free cocycle bialgebras

Abstract
The ordinary tensor product of Rota-Baxter operators is not stable and therefore does not provide a natural monoidal structure on the category of Rota-Baxter algebras. We resolve this obstruction by passing to augmented Rota-Baxter algebras and by introducing a triangular tensor product governed by the augmentation. This construction makes the category of augmented Rota-Baxter algebras into a monoidal category. We identify its comonoid objects with Rota-Baxter cocycle bialgebras, thereby giving a categorical explanation for the Hochschild 1-cocycle condition. As an application, we construct a canonical bialgebra structure on the free commutative Rota-Baxter algebra generated by a commutative bialgebra, prove its universal property as a free commutative Rota-Baxter cocycle bialgebra, and obtain a Hopf algebra in the connected filtered case.

Yining Sun
Northeast Normal University, China

A-generalized Hessian pre-Lie algebras and A-generalized Yang–Baxter equations

Abstract
In this talk, we introduce the A-generalized Yang–Baxter equation as a generalization of the Yang–Baxter equation for pre-Lie algebras. We study its symmetric solutions via A-generalized Hessian pre-Lie algebras and divide these solutions into two types. We further consider factorizable solutions of this equation and establish a one-to-one correspondence between them and generalized quadratic Rota–Baxter pre-Lie algebras of nonzero weight. By studying the structure of these algebras, we determine all factorizable solutions. Finally, we systematically investigate A-generalized Hessian pre-Lie algebras. We show that they are closely related to locally conformally Hessian manifolds. In particular, we obtain a structural description via central and double extensions and classify low-dimensional non-trivial A-generalized Hessian pre-Lie algebras.

Yuanyuan Zhang
Henan University, China

Nijenhuis BiHom-Lie bialgebras

Abstract
In this paper, we first introduce the concept of Nijenhuis BiHom-Lie algebras. Next, we establish equivalence relationships among Manin triples of Nijenhuis BiHom-Lie algebras, Nijenhuis BiHom-Lie bialgebras, and matched pairs of Nijenhuis BiHom-Lie algebras. Moreover, we build explicit connections between (Nijenhuis) BiHom-Lie bialgebras and the associated Yang–Baxter equations. This work is joint with Jiaqi Liu and Lin Gao.

Yuxiang Xiao
Nankai University, China

Unital antisymmetric infinitesimal bialgebras

Abstract
We establish a coherent bialgebra theory for unital associative algebras, covering core topics such as unital matched pairs, the double construction of Frobenius unital algebras, associative Yang–Baxter pairs, O-operator systems, Rota–Baxter systems, and factorability. The classical theory of antisymmetric infinitesimal bialgebras is systematically extended to the unital setting, giving rise to the theory termed unital antisymmetric infinitesimal bialgebras. This work is joint with Chengming Bai and Li Guo.

Zarina Shermatova
Romanovsky Institute of Mathematics, Uzbekistan Academy of Sciences, Uzbekistan

Generalized derivations of infinite-dimensional Lie algebras

Abstract
In this talk, we investigate the generalized derivations of the Witt and Virasoro algebras, as well as the Heisenberg-Virasoro type algebras W(a, b). We prove that every generalized derivation of the Witt algebra decomposes strictly as the sum of a derivation and a 1/2-derivation, and we provide an analogous result for the Virasoro algebra. Furthermore, we fully characterize the generalized derivations of the Lie algebras W(a, b). Additionally, we explore δ-derivations and transposed δ-Poisson structures on these algebraic systems.

Zeyu Hao
Northeast Normal University, China

C-generalized symplectic Lie algebras and C-generalized Yang–Baxter equations

Abstract
In this talk, we introduce the C-generalized Yang–Baxter equation as a natural extension of the classical Yang–Baxter equation. We show that the C-generalized Yang–Baxter equation gives rise to generalized Lie bialgebras in the sense of D. Iglesias and J. C. Marrero, Generalized Lie bialgebras and Jacobi structures on Lie groups, Israel J. Math. 133 (2003), 285–320. We study its skew-symmetric solutions through C-generalized symplectic Lie algebras, which leads to a natural classification of such solutions into two types. We further prove that the nontrivial C-generalized Yang–Baxter equation admits no factorizable solutions. Finally, we systematically investigate C-generalized symplectic Lie algebras. We show that they are closely related to locally conformal symplectic geometry, obtain their structure theorem via double extension techniques, introduce their left-symmetric analogue, and classify the four-dimensional nontrivial generalized symplectic Lie algebras.

Ziyi Zhang
Northeast Normal University, China

Gelfand–Dorfman algebras and transposed Poisson algebras: nilpotency, solvability, construction and classification

Abstract
In this talk, we characterize the nilpotency and solvability of Gelfand–Dorfman (GD) algebras. In contrast with Poisson algebras and transposed Poisson algebras, we give examples show the nilpotency and solvability of a GD algebra are not determined by the nilpotency and solvability of its underlying algebras. To obtain more examples of special and non-special GD algebras, we give several construction methods and determine whether the resulting algebras are special. Furthermore, we study GD algebra structures on simple Lie algebras. We provide examples demonstrating that GD algebra structures on simple Lie algebras are not necessarily trivial, distinguishing them from Poisson and transposed Poisson algebras. Finally, we provide a complete algebraic classification of 2, 3-dimensional complex GD algebras, and determine their nilpotency, solvability and speciality.

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