The Annual Meeting of the Israel Mathematical Union 2026
will be held at Bar-Ilan University, in Ramat Gan
on Sunday-Monday, July 5-6, 2026,
followed by the IMU Student Talks Day on Tuesday, July 7

הכנס השנתי של האיגוד הישראלי למתמטיקה תשפ״ו
יתקיים באוניברסיטת בר-אילן, ברמת גן
בימים א׳-ב׳, 5-6 ביולי 2026 (כ׳-כ״א תמוז תשפ״ו)
לאחריו יתקיים יום הרצאות סטודנטים תשפ״ו, ביום ג׳, 7 ביולי (כ״ב תמוז)

Schedule

Sunday, July 5th

Auditorium C50, Nanotechnology Building (Bldg 206)

9:30-9:45 Registration

9:45-10:00 Opening and Greetings
Prof. Mina Teicher, President, Israel Mathematical Union

10:00-10:40 Dr. Kobi Richter
Co-Chairman, Medinol

Discovery technology, physics and mathematics

10:40-11:05 Coffee break

11:05-11:20 Erdős, Levitzki and Nessyahu Prize ceremonies

11:20-12:00 Prof. Noam Lifshitz (Hebrew U.)
Erdős Prize Laureate

Group theory and representation theory through the lens of the Boolean cube

12:00-12:40 Dr. Shachar Carmeli (Weizmann)
Levitzki Prize Laureate

Characteristic classes in homotopy theory and arithmetic geometry

12:40-14:15 General Assembly and Buffet Lunch

14:15- Parallel Sessions

Algebra and Algebraic Geometry, Analysis, Logic, Probability, Representation Theory

תכנית

יום א', 5 ביולי

אודיטוריום C50, בניין הננו-טכנולוגיה (בניין 206)

9:45-9:30 הרשמה

10:00-9:45 פתיחה ודברי ברכה
פרופ' מינה טייכר, נשיאת האגוד

10:40-10:00 ד״ר קובי ריכטר
נשיא מדינול

המצאה טכנולוגית, פיזיקה ומתמטיקה בישומה

11:05-10:40 הפסקת קפה

11:20-11:05 טקס הענקת פרסי ארדש, לויצקי, ונסיהו

12:00-11:20 פרופ׳ נעם ליפשיץ (האונ׳ העברית)
זוכה בפרס ארדש

12:40-12:00 ד״ר שחר כרמלי (מכון ויצמן)
זוכה בפרס לויצקי

14:15-12:40 אסיפה כללית של העמותה וארוחת צהריים

-14:15 מושבים מקבילים

Monday, July 6th **יום ב', 6 ביולי**

Auditorium C50, Nanotechnology Building (Bldg 206)

אודיטוריום C50, בניין הננו-טכנולוגיה (בניין 206)

10:00-10:40 Prof. David Harel (Weizmann)
President, Israel Academy of Sciences

10:40-10:00 פרופ׳ דוד הראל (מכון ויצמן)
נשיא האקדמיה הלאומית למדעים

On computational prosody

10:40-11:10 Guest Lecture

11:10-10:40 הרצאת אורח

11:10-11:30 Coffee break

11:30-11:10 הפסקת קפה

11:30-12:10 Prof. Irit Dveer Dinur
(Weizmann and IAS)

12:10-11:30 פרופ׳ אירית דביר-דינור (מכוו ויצמן ומכון ללימודים מתקדמים, פרינסטון)

High-dimensional expansion and local testing

12:10-12:50 Dr. Shai Evra (Hebrew U.)
Levitzki Prize Laureate

12:50-12:10 ד״ר שי אברה (האונ׳ העברית)
זוכה בפרס לויצקי

Golden generators in compact unitary Lie groups

12:50-14:15 Buffet Lunch

14:15-12:50 ארוחת צהריים

14:15- Parallel Sessions

-14:15 מושבים מקבילים

Applied Mathematics, Combinatorics, History of Mathematics

Parallel Sessions Organizers:

- *Algebra and Algebraic Geometry:* Yotam Hendel (Ben-Gurion)
  - ***Building 206, Auditorium C50 (Sunday)***
- *Analysis:* Gady Kozma (Weizmann)
  - ***Building 202, Room 301 (Sunday)***
- *Applied Mathematics:* Nir Gavish (Technion)
  - ***Building 206, Auditorium C50 (Monday)***
- *Combinatorics (in honor of the 90th birthday of Prof. Micha Perles*):
  Noga Alon (Tel Aviv and Princeton) and Gil Kalai (Hebrew U. and Reichman)
  - ***Building 202, Room 301 (Monday)***
- *History of Mathematics:* Lina Vinitsky-Pinsky (Achva College*)*
  - ***Building 206, Room 991 (Monday)***
- *Logic:* Yatir Halevi (Technion)
  - ***Building 212, Room 101 (Sunday)***
- *Probability:* Yinon Spinka (Tel Aviv)
  - ***Building 105, Room 106 (Sunday)***
- *Representation Theory:* Eitan Sayag (Ben-Gurion**)**
  - ***Building 206, Room 991 (Sunday)***

Algebra and Algebraic Geometry Building 206, Auditorium C50	14:15 -- 15:00 **Evgenii Shustin** (Tel Aviv)	15:00 -- 15:45 **Sa'ar Zehavi** (Weizmann)	coffee break	16:15 -- 17:00 **Boris Kunyavskii** (Bar-Ilan)	17:10 -- 17:55 **Howard Nuer** (Technion)	
Analysis Building 202, room 301	14:15 -- 14:55 **Nir Lev** (Bar-Ilan)	15:05 -- 15:45 **Or Shalom** (Bar-Ilan)	coffee break	16:15 -- 16:55 **Pierre Bizeul** (Weizmann)	17:00 -- 17:40 **Oleg Ivrii** (Tel Aviv)	
Logic Building 212, room 101	14:15 -- 15:00 **Moshe Kamensky** (Ben-Gurion)	15:00 -- 15:40 **Oria Frenkel** (Hebrew University)	coffee break	16:15 -- 17:00 **Itay Kaplan** (Hebrew University)	17:10 -- 17:40 **Roei Shifiri** (Ben-Gurion)	
Probability Building 105, room 106	14:15 -- 14:55 **Ori Gurel-Gurevich** (Hebrew University)	15:00 -- 15:40 **Yeor Hafouta** (University of Florida)	coffee break	16:15 -- 16:45 **Daniel Sharon** (Technion)	16:45 -- 17:15 **Zhenhao Cai** (Weizmann)	
Representation Theory Building 206, room 991	14:15 -- 15:00 **Evgeny Feigin** (Tel Aviv)	15:00 -- 15:45 **Eyal Subag** (Bar-Ilan)	coffee break	16:15 -- 17:00 **Yakov Varshavsky** (Hebrew University)	17:10 -- 17:55 **Shaul Zemel** (Hebrew University)	
Applied Mathematics Building 206, Auditorium C50	14:15 -- 14:40 **Arik Yochelis** (Ben-Gurion)	14:45 -- 15:10 **Arkady Poliakovsky** (Ben-Gurion)	15:15 -- 15:40 **Snir Horden** (Technion)	coffee break	16:15 -- 16:40 **Guy Rothman** (Tel Aviv)	16:45 -- 17:10 **Vered Rom-Kedar** (Weizmann)
Combinatorics (in honor of Prof. Micha Perles) Building 202, room 301	14:15 -- 14:45 **Nati Linial** (Hebrew University)	14:50 -- 15:20 **Gil Kalai** (Hebrew University and Reichman)	15:25 -- 15:55 **Noga Alon** (Tel Aviv and Princeton)	coffee break	16:20 -- 16:50 **Ron Adin** (Bar-Ilan)	16:55 - 17:25 **Rom Pinchasi** (Technion)
History of Mathematics Building 206, room 991	14:15 -- 14:45 **Leo Corry** (Open University and Tel Aviv)	14:45 -- 15:15 **Zlil Sela** (Hebrew University)	15:15 -- 15:45 **Mikhail Katz** (Bar-Ilan)	coffee break		

Sunday, July 5, 2026

Algebra and algebraic geometry

14:15 - 15:00 Eugenii Shustin (Tel Aviv University)

Quantum index and real enumerative geometry

Recently, G. Mikhalkin introduced an integral-valued quantum index of real curves on toric surfaces and defined new refined real rational enumerative invariants of toric surfaces. The talk is devoted to an extension of Mikhalkin's theory to higher genera and to arbitrary del Pezzo surfaces. This is a joint work with I. Itenberg.

15:00 - 15:45 Sa'ar Zehavi (Weizmann)

Arithmetic Wu formulas and the generalized Hecke theorem

Several classical theorems in arithmetic, geometry, and topology can be viewed as asserting the mod-2 vanishing of certain Chern classes. Examples include Heckes theorem on the different, Atiyahs theorem on theta characteristics, and Serres RiemannHurwitz formula for spin bundles. In this talk, I will explain a common mechanism behind these results: they arise from Wu-type formulas. I will discuss joint work with Shachar Carmeli and Mark Shusterman in which we extend Wus formula from topology to arithmetic and prove a generalized Hecke theorem: an infinite family of universal mod-2 congruences between Chern classes of varieties over rings of integers, away from the prime 2. This framework extends classical results from topology and geometry into arithmetic and gives a uniform conceptual explanation for a broad family of Hecke-type phenomena through the study of arithmetic characteristic classes.

16:15 - 17:00 Boris Kunyavskii (Bar-Ilan University)

Linearization of finite subgroups of Cremona groups over non-closed fields

We study linearizability properties of finite subgroups of the Cremona group $\mathrm{Cr}(n,k)$ in the case where k is a global field, with the focus on the local-global principle. For every global field k of characteristic different from 2 and every $n>2$, we give an example of a birational involution of the projective n-space, i.e. an element $g\in \mathrm{Cr}(n,k)$ of order 2 isuch that g is linearizable everywhere locally but not globally.

17:10 - 17:55 Howard Nuer (Technion)

Quadratically enriched enumeration in pencil problems

Motivic homotopy theory has recently provided the tools to bridge classical and real enumerative geometry, allowing us to compute invariant counts over an arbitrary field k. Valued in the Grothendieck-Witt ring $\mathrm{GW}(k)$ of non-degenerate quadratic forms, these "quadratic enrichments" breathe new life into classical geometric invariants. A milestone in this area is Kass and Wickelgrens enriched count of the 27 lines on a cubic surface, achieved by computing the $\mathbb{A}^1$-homotopy Euler class of a corank 0 oriented vector bundle over a Grassmannian. But what happens when previous Euler class techniques fail?

In this talk, I will discuss ongoing joint work with T. Brazelton, A. Jaramillo-Puentes, and M. Zeng where we tackle the quadratic enrichment of enumerative problems described by vector bundles of positive corank on Grassmannians. To overcome the limitations of existing techniques, we develop a new correspondence that shifts the positive corank problem into a solvable corank 0 framework.

We will focus our applications on enumerative pencil problems. I will outline how this relationship yields quadratic enrichments for classical counts, including the lines in a general pencil of degree $2n2$ hypersurfaces in $\mathbb{P}^n$, and the planes in a general pencil of cubic fourfolds. The latter elegantly provides a quadratic enrichment for the Gromov-Witten invariant $\mathrm{GW}_{1,3}$ on a general $(3,3)$ complete intersection Calabi-Yau threefold. Finally, time permitting, we will ground these

enriched invariants by connecting them back to classical constructions like discriminants and resultants.

Analysis

14:15 - 14:55 Nir Lev (Bar-Ilan University)

Packing density of convex bodies and the Delsarte bound

I will present the Delsarte linear programming bound developed by Cohn and Elkies for estimating the density of packing by translates of a convex body in d-dimensional Euclidean space. I will then discuss a recent result, joint with Kolountzakis and Matolcsi, showing that this method always provides a nontrivial packing bound if the convex body cannot tile the space by translations.

15:05 - 15:45 Or Shalom (Bar-Ilan University)

Can we generalize the Herglotz theorem for multicorrelation sequences?

Herglotz's theorem is a foundational result in functional analysis, establishing that the matrix coefficients of a unitary operator can be represented as integrals against a complex-valued spectral measure on the unit circle.

When the unitary operator in question is a Koopman operator, these matrix coefficients can be naturally extended to multilinear forms, known as multicorrelation sequences, which play a fundamental role in additive combinatorics (most notably serving as the core machinery behind Furstenberg's landmark proof of Szemerédi's theorem).

The goal of this talk is to explore recent progress, structural insights, and open conjectures surrounding a potential generalization of Herglotz's theorem for these multicorrelation sequences.

16:15 - 16:55 Pierre Bizeul (Weizmann)

Distance between convex bodies in high dimensions

How far apart can two convex bodies in $\mathbb{R}^n$ be, after suitable affine transformations? While the symmetric case was settled by results of John and Gluskin, the general case remained open. In joint work with Bo'az Klartag, we prove that the Banach-Mazur distance between two convex bodies K and L is at most $Cn\log^{\alpha}(n)$, improving on Rudelsons $n^{4/3}\log^{\alpha}(n)$ bound. Up to polylogarithmic factors, this estimate is optimal and matches the symmetric case, where Gluskins construction is known to be tight. The bound is attained when K and L are in a random isotropic position and follows from a new low MM^* estimate.

17:00 - 17:40 Oleg Ivrii (Tel Aviv University)

Orbit counting for rational maps

Let F be a rational map of degree at least 2 and $x \in \mathcal{J}$ be a point in the Julia set of F. Define

$$n(x,T) = \#\big\{(n \geq 0, y \in \mathcal{J}) \,:\, F^{\circ n}(y) = x,\, \log|(F^{\circ n})'(y)| < T\big\}.$$

Assume F admits a conformal measure m of dimension α and an absolutely continuous invariant probability measure $\mu = \gamma dm$ with a positive Lyapunov exponent. We show that if we exclude a small list of exceptional rational maps, then

$$n(x,T) \sim e^{\alpha T} \cdot \frac{\gamma(x)^{\alpha}}{\int_X \log|F'(x)|\, d\mu}, \quad \text{as } T \to \infty,$$

for μ a.e. $x \in X$. Using a rigidity theorem of Eremenko and van Strien, we establish a variant of the above result that also incorporates the argument of the derivative, as in the work of Oh and Winter.

Logic

14:15 - 15:00 Moshe Kamensky (Ben-Gurion University)

Some model theory of rational dynamics

A rational dynamical system consists of a variety X and a rational (algebraic) map from X to itself. We study a special class of such dynamical systems, the isotrivial ones, showing, for example, that if the system has no "first integrals," then it has only finitely many maximal proper invariant subvarieties (the Dixmier–Moeglin problem). This result, as well as others, is a corollary of the main theorem, which states that the birational automorphism group of such a system is an

algebraic group. This, in turn, is a special case of the "binding group" theorem in model theory. I will explain the definitions and statements involved, as well as the model-theoretic point of view on the situation. This is joint work with Rahim Moosa from the University of Waterloo.

15:10 - 15:40 Oria Frenkel (Hebrew University)

Mixed identities in oligomorphic automorphism groups

We study equations with constants in infinite permutation groups via the notion of mixed identities: non-trivial words in a free product $G * \mathrm{Fr}$ that vanish identically on G. Motivated by a recent conjecture of Bodirsky, Schneider, and Thom, we focus on mixed identities in automorphism groups of homogeneous ω-categorical structures. We first review the main results of their paper and use these to prove the conjecture for primitive ω-stable structures of finite relational languages. If time permits, we will also discuss mixed-identity-free (MIF) automorphism groups and present general methods for proving that certain automorphism groups are MIF.

16:15 - 17:00 Itay Kaplan (Hebrew University)

On singular local character for finitely satisfiable types and NIP

This is partly a joint work with Pierre Simon and partly with Saharon Shelah. When is it the case that a complete type over a model is finitely satisfiable in a model of a strictly smaller size? We show that when the cardinality of the model is singular, the answer is strongly related to NIP. We will also discuss variants of this.

17:10 - 17:40 Roei Shirifi (Ben-Gurion University)

Categorical logic and model theory: Makkai's theorem and ultracategories

Given a first-order theory T, the collection of its models possesses a natural categorical structure, $\mathrm{Mod}(T)$. A fundamental question that arises when observing the category of models –which is a purely semantic entity – is how much of the theory's original syntax can be reconstructed from this categorical structure.

In the language of categorical logic, Michael Makkai addressed this question via his Conceptual Completeness Theorem. This theorem demonstrates that in order to recover the syntax (up to a certain equivalence of theories), an additional structural layer on the category of models is indispensable: the structure of ultraproducts. Driven by this insight, Makkai, and subsequently Jacob Lurie in greater detail, introduced "ultracategories": categories equipped with an ultraproduct functor that complies with a coherent system of axioms. In this lecture, we will define these notions and explore the mechanics of Makkai's theorem. We will then turn our attention to the inverse problem: given an abstract ultracategory M, does it arise as the category of models of some first-order theory? More specifically, we will narrow our focus to "ultrasets": ultracategories whose only morphisms are identities. We will provide a definitive answer to this question, characterizing precisely which theories give rise to model categories that are ultrasets. While reaching this result involves heavy categorical machinery, the discussion will remain accessible and firmly grounded in the intuitions of classical model theory, providing a transparent logical translation for each abstract categorical concept.

Probability

14:15 - 14:55 Ori Gurel-Gurevich (Hebrew University)

Exceptional rays in invariant processes on trees

Consider a process on the edges of the d-regular tree which is non-constant, ergodic, and invariant under all automorphisms of the tree. We show that such a process necessarily admits an exceptional ray for which the asymptotic average of the process along the ray is bigger than the expectation of the process. We will discuss history and related results. Based on joint works with Itai Benjamini and Nitzan Hen.

15:00 - 15:40 Yeor Hafouta (University of Florida)

Local limit theorems for non-stationary sequences

The local central limit theorem (LCLT) has origins in the De Moivre-Laplace theorem and it goes back to De Moivre's paper from 1733. In this talk we will discuss the LCLT for non-autonomous subshifts of finite type taken with Gibbs measures and present the exact obstructions for the local asymptotic law to be Lebesgue. These obstructions are richer than the ones in the stationary case. If time permits we will discuss several applications and relations with other areas of mathematics. The talk is based on joint work with Dmitry Dolgopyat.

16:15 - 16:45 Daniel Sharon (Technion)

Cluster-cluster model

The cluster-cluster model was defined by Meakin in 1984. Consider a stochastic process on the graph $\mathbb{Z}^d$. Each $x \in \mathbb{Z}^d$ starts with a cluster of size 1 with probability $p \in (0, 1]$ independently. Each cluster C performs a continuous time SRW with rate $|C|^{-\alpha}$. If it attempts to move to a vertex occupied by another cluster, it does not move, and instead the two clusters connect via a new edge. In this talk we will present results about explosion, non-explosion, and cluster growth rates, as a function of the dimension d, percolation density p, and diffusion rate parameter α. Joint work with Noam Berger (TUM), Eviatar B. Procaccia (Technion), and Dominik Schmid (Augsburg University).

16:45 - 17:15 Zhenhao Cai (Weizmann)

Progress towards the scaling limit of loop soup percolation in three dimensions

In the last decade, loop soup percolation stands out as one of the few lattice percolation models where significant progress has been made in intermediate dimensions. This largely stems from the profound link between loop soups and Gaussian free fields, characterized by a Ray-Knight-type theorem. This talk will present our recent result that the clusters of loop soups on $\mathbb{R}^3$ and the metric graph of $\mathbb{Z}^3$ have different fractal dimensions. This result corrects a key prediction in Wendelin Werners blueprint for the scaling limit of this model. This is joint work with Jian Ding (Peking University).

Representation Theory

14:15 - 15:00 Evgeny Feigin (Tel Aviv University)

Truncated representations and truncated Grassmann varieties

Truncated Grassmannians are defined as closures of orbits of abelian unipotent groups acting on the degree truncations of projectivized wedge powers. We will discuss algebraic properties of these degree truncations and geometric properties of the corresponding orbit closures. We will also explain how our construction generalizes to the setting of finite-dimensional representations of simple Lie algebras.

15:00 - 15:45 Eyal Subag (Bar-Ilan University)

Dirac operators for algebraic families

In this talk, I will discuss Dirac operators and Dirac cohomology for algebraic families associated with a real reductive Lie group. The main example will be the deformation family interpolating between the real reductive Lie group and its Cartan motion group. I will explain how to construct algebraic families of Dirac operators in this setting, and formulate a family version of Vogans conjecture, relating the infinitesimal character of an algebraic family of Harish-Chandra modules to its Dirac cohomology. No prior knowledge of algebraic families or Dirac theory will be assumed. This is joint work with S. Afentoulidis-Almpanis.

16:15 - 17:00 Yakov Varshavsky (Hebrew University)

Refined categorical Moy-Prasad theory and applications

The goal of my talk is to explain a joint work in progress with Gurbir Dhillon and David Yang.

Let G be a connected reductive group over a field $k((t))$. Our main result asserts that the category $G-\mathrm{Cat}$ of categorical representations of G can be described in terms of depth zero categorical representations of twisted Levi subgroups of G.

17:10 - 17:55 Shaul Zemel (Hebrew University)

Generalized higher Specht polynomials and stable representations of symmetric groups

The higher Specht polynomials were defined by Ariki, Terasoma, and Yamada in order to express the co-invariant ring of the action of S_n on polynomials as the regular representation. We show how these objects can be generalized and renormalized in order to generate various types of stable representations, as well as lift several character formulae to actual decompositions of representations. If time permits we indicate how these stable representations have limits as representations of infinite symmetric groups on eventually symmetric functions.

Monday, July 6, 2026

Applied Mathematics

14:15 - 14:40 Arik Yochelis (Ben-Gurion)

Bifurcation theory and multiple motility modes in eukaryotic cells

Eukaryotic cells exhibit a wide range of dynamic patterns involving filamentous actin (F-actin) and its regulators, patterns that underlie key cellular functions, including distinct modes of motility. Based on a mass-conserved reaction-diffusion model of the actin cortex, we analyze 1D periodic solutions, representing the edge of a thin sheet-like cell, using bifurcation theory complemented by numerical simulations.

Among the bifurcations considered, the analysis focuses on the unfolding of a codimension-two instability involving both a long-wavelength mode and a finite-wavenumber Hopf mode. This unfolding reveals a rich organization of steady wave-pinning states and traveling waves. In particular, we identify unexpected conditions under which steady wave-pinning states and traveling waves can coexist bistably on moderate-sized domains.

The results reveal possible generic mechanisms for the coexistence of, and transitions between, different cellular motility modes, including cell polarization, crawling, ruffling, and disordered dynamics. More broadly, they suggest that non-gradient reaction-diffusion systems with mass conservation possess distinctive pattern-formation mechanisms.

14:45 - 15:10 Arkady Poliakovsky (Ben-Gurion)

BMO-Interpolations and Jump Detection for Functions in $BV \cap BMO$

We prove refined versions of the John-Nirenberg inequality. These estimates provide a unified framework for deriving interpolation results for BMO in Lorentz spaces, Besov spaces, the space BV, and fractional Sobolev spaces.

As a geometric application, we combine our interpolation results with previously established formulas to obtain jump detection results for functions in $BV \cap BMO$. In particular, we show that such functions belong to suitable Besov spaces, which allows one to recover information about their jump set via limits of integral expressions involving difference quotients.

15:15 - 15:40 Snir Horden (Technion)

Weisfeiler-Leman is incomplete on simple spectrum graphs, so canonicalize them

Graphs with a simple spectrum admit cubic-time isomorphism testing, yet we prove that for every natural number k, the k-Weisfeiler–Leman ($k-$WL) test cannot distinguish all non-isomorphic graphs with a simple spectrum. As the WL hierarchy upper-bounds the distinguishing power of widely-used graph neural networks (GNNs), this incompleteness applies to all such GNNs, ruling out completeness for every $k-$WL-aligned GNN family.

To close this gap, we introduce PRiSM (Partition, Refine, Solve, Match), the first provably complete canonicalization of simple-spectrum eigendecompositions. PRiSM obtains the completeness guarantee that prior canonicalizations provably lack, and resolves the open problem of achieving complete expressivity on simple-spectrum graphs.

16:15 - 16:40 Guy Rothman (Tel Aviv University)

Phase Transition in the Susceptible-Infected model on hypernetworks

Spreading processes on networks have been studied in various research areas. In epidemiology, mathematical models have been used to study the spread of infectious diseases in social networks. A key question in these studies has been the role that network structure plays in the spreading.

Traditionally, the Susceptible-Infected (SI) model assumes that the overall rate of peer influences is the sum of the individual influence rates exerted by the peers. Many real-world interactions, however, exhibit inherent nonlinear depen-

dencies. Recognizing this, recent research has moved beyond pairwise interactions to models of spreading processes on hypernetworks. A central question in these studies is: do nonlinear interactions change the spreading dynamics?

We investigate this question using the Sl model on hypergraphs as follows. We derive the master equations for the spreading process. We then solve these equations explicitly and obtain exact explicit expressions for the expected infection level as a function of time, for regular hypernetworks and hyperlines. These expressions are exact, as they are derived without any mean-field or any other type of approximation.

We observe a phase transition in the Sl model on d-regular N-body hypernetworks, which is absent in d-regular networks with pairwise interactions. The phase transition indicates that there exists a critical initial infection level below which the disease does not spread to the entire population.

16:45 - 17:10 Vered Rom-Kedar (Weizmann)

Hovering orbits in perturbed pseudo-integrable Hamiltonian impact systems

Hamiltonian impact systems describe mechanical systems that evolve smoothly within a domain and undergo elastic reflections at its boundary, modeling, for example, potentials with sharp local gradients.

I will describe a class of such systems that exhibits pseudo-integrable behavior and show several surprising features of their perturbations. For example, perturbations can give rise to a positive-measure set of hovering orbits – non-resonant trajectories that are absent in the unperturbed system. This provides a striking example of how impacts and discontinuities can generate qualitatively new phenomena in near-pseudo-integrable Hamiltonian systems.

Joint work with I. Pazi and A. Zobova, see https://arxiv.org/abs/2509.24688 (to appear in SIAM journal on Applied Dynamical Systems) and https://arxiv.org/abs/2605.27987v1.

Combinatorics (in honor of the 90th birthday of Prof. Micha Perles)

14:15 - 14:45 Nati Linial (Hebrew University)

Adventures with polytopes

To the best of my recollection, I first heard about polytopes only when I started to attend Micha's seminar, but with time, I found myself studying them myself. Fondly remembering the many things that I learned from Micha, I will tell about my most recent foray into this realm. The $n \times n$ bi-stochastic matrices form a polytope, in which every permutation matrix is clearly a vertex. The Birkhoff-von-Neumann theorem says that this exhausts the list of vertices. An $n \times n \times n$ array of non-negative reals is called tri-stochasic if every row, column, and shaft in it sums to 1. These arrays form a polytope too, where every Latin squares is clearly a vertex. However, as we show, Latin squares are only a vanishingly small minority of the vertices.

Joint with Zur Luria and Maya Trakhtman arXiv:2604.09290.

14:50 - 15:20 Gil Kalai (Hebrew University and Reichman University)

Reflections on some old problems and results

I will describe some problems and results of Micha A. Perles, and his students about polytopes, convex sets and point configurations, from the seventies and eighties of the 20th century, and some progress made over the past decades.

15:25 - 15:55 Noga Alon (Tel Aviv University and Princeton University)

Micha and shattering

The Sauer-Perles-Shelah lemma is a fundamental result in extremal combinatorics with applications in discrete geometry, computional learning, probability, combinatorics, model theory, property testing, social choice, and more. After very brief comments about the original result, I will describe some recent variants and extensions.

16:20 - 16:50 Ron Adin (Bar-Ilan University)

Circular sorting

What is the maximal number of steps required to sort n labeled points on a circle, by swapping points in adjacent positions? What if we swap adjacent values, rather than adjacent positions? What if we allow arbitrary (not necessarily adjacent) swaps?

These are circular analogues of well-known sorting problems, with applications in various computational sciences. We will describe exact results, as well as bounds, obtained using combinatorial, probabilistic and number theoretic methods.

Based on joint works with Noga Alon, Eli Bagno and Yuval Roichman.

16:55 - 17:25 Rom Pinchasi (Technion)

30 years later– on the occasion of the 90th anniversary of Micha Perles

In honor of Micha Perles' 90th anniversary we will bring some of the many anecdotes that were not mentioned by previous speakers. We will combine these fun and beautiful memories from 30 years ago with some research and results that constitute my own private memories with Micha. The 90th anniversary of Micha Perles is a milestone for many people in the community of discrete geometry and combinatorics. Could it also be the end of the classical era of mathematics in some sense? We will know the answer by the 100th anniversary of Micha Perles. I promise many more anecdotes then.

History of Mathematics

14:15 - 14:45 Leo Corry (Open University)

Chaim L. Pekeris and the art of applying mathematics with WEIZAC

In this talk I describe the work of Chaim Leib Pekeris and his collaborators at the Weizmann Institute in Rehovot, between 1955 and 1963, using the first electronic computer built in Israel, the Weizmann Automatic Computer (WEIZAC). They developed powerful numerical methods that helped achieve new and accurate solutions of the Boltzmann equation, calculate energy levels of the helium atom, produce detailed geophysical and seismological models derived from the study of the free oscillations of the earth, and refine models used to predict meteorological phenomena and global oceanic tides. Pekeris's scientific leadership was a major factor, not always duly acknowledged, behind the rise of the Weizmann Institute as a world-class center of scientific excellence.

14:45 - 15:15 Zlil Sela (Hebrew University of Jerusalem)

On the mathematics of Prof. Eliyahu Rips

Prof. Eliyahu Rips was one of the leading group theorists and passed away in July 2024. In the talk I intend to survey some of the main contributions of Prof. Rips, describe his vision and exceptional intuition, and my own experience as his student and collaborator.

15:15 - 15:45 Mikhail Katz (Bar-Ilan University)

Notes from the underground

We present a critique of the prevailing historical interpretation of Leibnizian calculus, highlighting resistance within the academic community to alternative views on the history of infinitesimals. In a series of over 80 articles, our group proposed a new paradigm for the history of mathematics over the past 350 years. As may have been anticipated by Kuhn and Lakatos, our proposal encountered fierce opposition from some of the established historians of mathematics. A fresh PhD sympathetic to our proposal appears to have been canceled. A Leibniz scholar felt it so imperative to join a broadside against our work that he contradicted his own earlier Leibniz scholarship. Historians of the previous generation who didnt fit the current dogma are either ridiculed or, when this is impossible, are given a far-fetched interpretation to force such a fit. But, little by little, the truth is coming out.

IMU Student Talks Day 2026 – Schedule

The plenary talks will be held in the Auditorium of the CS building (no. 503), and all the refreshments during the day will be served there. The sessions will be held in the Auditorium of the CS building and in room 226 of the CS building.

09:30-09:35	Opening remarks (CS Auditorium)	
09:40-10:25	**Applied Mathematics** (CS Auditorium)	**Game Theory** (CS 226)
09:40-10:00	Lior Sasson (Techion)	
10:05-10:25	Shai Zucker (TAU)	Maor Ben Zaquen (Technion)
10:25-10:45	Coffee Break	
10:45-11:55	**Algebra** (CS Auditorium)	**Probability and Number Theory** (CS 226)
10:45-11:05	Avital Binyamin (HUJI)	Naomi Bazlov (Technion)
11:10-11:30	Tomer Bauer (BIU)	Tamar Cherno (HUJI)
11:35-11:55	Hilel Garmi (HUJI)	Hillel Raz (Technion)
12:00-13:00	Lunch (near the CS auditorium, building 503)	
13:00-13:40	**Plenary Talk 1** (CS Auditorium)**:** Prof. Alex Lubotzky (WIS) - Group approximation: challenges, successes, and failures	
13:40-14:20	**Plenary Talk 2** (CS Auditorium)**:** Prof. Ofer Zeitouni (WIS) - Random matrices meet log-correlated fields	
14:20-14:35	Break	
14:35-15:45	**Group Theory** (CS Auditorium)	**Combinatorics** (CS 226)
14:35-14:55	Tal Cohen (WIS)	Jon Kogan (HUJI)
15:00-15:20	Michael Glasner (WIS)	Andrey Yurkov (BIU)
15:25-15:45	Niv Levhari (TAU)	Noor Kezil (Haifa)
15:45-16:05	Coffee Break	
16:05-17:15	**Geometry and PDE** (CS Auditorium)	**Ergodic Theory** (CS 226)
16:05-16:25	Michael Oren-Perlstein (WIS)	Borys Holikov (BIU)
16:30-16:50	Gilad Derfner (HUJI)	Lipaz Cohen (BGU)
16:55-17:15	Polina Leonchik (Technion)	Amit Levinson-Sela (BGU)
17:15-17:25	Break	
17:25-18:05	**Nessyahu Prize Talk** (CS Auditorium): Dr. Omri Solan (Princeton) - From billiard dynamics to infinite volume dynamics	
18:05-18:15	**IMU Student Talk Award Ceremony** (CS Auditorium)	