
Israel GAFA Seminar (2003)

(The following was mistakenly omitted from the previous volume)

Friday, January 10, 2003

1. *K. Ball* (London): Entropy growth in presence of a spectral gap (joint work with S. Artstein, F. Barthe and A. Naor)
2. *V. Milman* (Tel Aviv): Some recent mathematical news (counter example to Knaster conjecture by Kashin and Szarek and some other news)
3. *Y. Shalom* (Tel Aviv): Isometric actions on Hilbert spaces and applications

Israel GAFA Seminar (2004-2006)

Friday, April 30, 2004

1. *B. Klartag* (Tel Aviv): Geometry of log-concave functions and measures (joint work with V. Milman)
2. *H. Furstenberg* (Jerusalem): Eigenmeasures, multiplicity of β expansions, and a problem in equidistribution

Friday, May 21, 2004

1. *A. Naor* (Microsoft): Stochastic metric partitions and the Lipschitz extension problem (joint work with J.R. Lee)
2. *M. Rudelson* (Columbia, Missouri): Euclidean embeddings in spaces of finite volume ratio via random matrices (joint work with A.E. Litvak, A. Pajor, N. Tomczak-Jaegermann and R. Vershynin)

Friday, October 29, 2004

1. *N. Alon* (Tel Aviv): Quadratic forms on graphs (joint work with K. Makarychev, Y. and A. Naor)
2. *M. Sodin* (Tel Aviv): Sign and area in nodal geometry of Laplace–Beltrami eigenfunctions (joint work with F. Nazarov and L. Polterovich)

Friday, December 24, 2004

1. *G.M. Zaslavsky* (Courant Institute, NYU): Chaotic and pseudochaotic field lines
2. *A. Elgart* (Stanford): Localization for random Schroedinger operator

Friday, December 31, 2004

1. *A. Sodin* (Tel Aviv): Central limit theorem for convex bodies and large deviations
2. *S. Artstein* (Princeton): Two geometric applications of Chernoff inequality: A zigzag approximation for balls and random matrices (joint work with O. Friedland and V. Milman)

Friday, January 7, 2005

1. *A. Shapira* (Tel Aviv): Recent applications of Szemerédi's regularity lemma
2. *B. Klartag* (I.A.S. Princeton): On Dvoretzky's theorem and small ball probabilities
3. *A. Samorodnitsky* (Jerusalem): Hypergraph linearity tests for Boolean functions
4. *G. Kalai* (Jerusalem): Discrete isoperimetric inequalities

Friday, April 1, 2005

1. *Y. Ostrover* (Tel Aviv): On the extremality of Hofer's metric on the group of Hamiltonian diffeomorphisms (joint work with R. Wagner)
2. *A. Naor* (Microsoft): How to prove non-embeddability results?

Friday, June 3, 2005

1. *E. Ournycheva* (Jerusalem): Composite cosine transforms on Stiefel manifolds (joint work with B. Rubin)
2. *S. Artstein* (Princeton): A few remarks concerning reduction of diameter and Dvoretzky's theorem for special classes of operators

Friday, December 16, 2005

1. *S. Artstein* (Princeton University and IAS): Logarithmic reduction of randomness in some probabilistic geometric constructions (joint work with V. Milman)
2. *S. Mendelson* (Technion and ANU, Canberra): Controlling weakly bounded empirical processes

Friday, December 23, 2005

1. *M. Sodin* (Tel Aviv): Transportation to random zeroes by the gradient flow (joint work with F. Nazarov and A. Volberg)
2. *O. Schramm* (Microsoft): The Gaussian free field and its level lines (based on joint work with Scott Sheffield)

Friday, January 13, 2006

1. *B. Sudakov* (Princeton University and IAS): Embedding nearly-spanning bounded degree trees (joint work with N. Alon and M. Krivelevich)
2. *S. Bobkov* (Minneapolis): Large deviations over convex measures with heavy tails

Friday, January 27, 2006

1. *M. Krivelevich* (Tel Aviv): Sphere packing in R^n through graph theory (joint work with S. Litsyn and A. Vardy)
2. *A. Giannopoulos* (Athens): Random 0-1 polytopes (joint work with D. Gatzouras and N. Markoulakis)

Midrasha Mathematicae: Connection Between Probability and Geometric Functional Analysis

(Jerusalem, June 14-19, 2005)

(Organizers: A. Szankowski and G. Schechtman)

This summer school was composed of the following eight short courses:

1. *N. Alon* (Tel Aviv): Semidefinite programming and Grothendieck type inequalities
2. *B. Bollobas* (Cambridge and Memphis): Discrete and continuous percolation
3. *N. Kalton* (Columbia, Missouri): R-boundedness: an introduction
4. *R. Latała* (Warsaw): Inequalities for Gaussian measures
5. *M. Ledoux* (Toulouse): Small deviation inequalities for largest eigenvalues
6. *K. Oleszkiewicz* (Warsaw): Comparison of moments for the sums of random vectors
7. *S.J. Szarek* (Paris and Case Western): Random normed spaces: from Gluskin spaces to the saturation phenomenon
8. *M. Talagrand* (Paris): The generic chaining

**Contemporary Ramifications of Banach Space Theory
In Honor of Joram Lindenstrauss and Lior Tzafriri
(Jerusalem, June 20–24, 2005)**

(Organizers and program committee: W.J. Johnson, H. Koenig, V. Milman,
G. Schechtman, A. Szankowski, M. Zippin)

Monday, June 20

1. *V. Milman* (Tel Aviv): Analytic form of some geometric inequalities
2. *M. Rudelson* (Columbia, Missouri): Geometric approach to error correcting codes
3. *R. Schneider* (Freiburg): Projective Finsler spaces and zonoid geometry
4. *A. Koldobsky* (Columbia, Missouri): The geometry of L_0
5. *N.J. Nielsen* (Odense): Rosenthal operator spaces
6. *A. Zvavitch* (Kent, Ohio): The Busemann–Petty problem for arbitrary measures
7. *A. Lima* (Kristiansand): A weak metric approximation property
8. *B. Klartag* (IAS): Geometric inequalities for logarithmically concave functions
9. *E. Oja* (Tartu): The approximation property and its weak bounded version
10. *D. Yost* (Ballarat): Quasilinear mappings and polyhedra
11. *V. Lima* (Kristiansand): Ideals of operators and the weak metric approximation property
12. *O. Maleva* (London): Bi-Lipschitz invariance of the class of cone null sets
13. *C. Read* (Leeds): Hypergraphs, probability and the non-amenability of $B(l^1)$

Tuesday, June 21

1. *W.J. Johnson* (College Station, Texas): A survey of non-linear Banach space theory
2. *D. Preiss* (London): Differentiability of Lipschitz maps between Banach spaces
3. *N. Kalton* (Columbia, Missouri): Extending Lipschitz and linear maps into $C(K)$ -spaces

Wednesday, June 22

1. *M. Talagrand* (Paris): Functional Analysis problems related to the Parisi theory
2. *S. Szarek* (Paris): Geometric questions related to quantum computing and quantum information theory
3. *G. Schechtman* (Rehovot): L_p Spaces, Large and Small
4. *K. Oleszkiewicz* (Warsaw): Invariance principle and noise stability for functions with low influences
5. *A. Pajor* (Marne-la-Vallée): Diameter of random sections and reconstruction
6. *B. Cascales* (Murcia): The Bourgain property and Birkhoff integrability
7. *G. Godefroy* (Paris): Smoothness and weakly compact generation: Joram Lindenstrauss' question 30 years later
8. *M. Girardi* (South Carolina): Martingale transforms by operator-valued predictable sequences
9. *S. Artstein* (Princeton): Some results regarding sign matrices
10. *S. Argyros* (Athens): Indecomposable and sequentially unconditional Banach spaces
11. *A. Hinrichs* (Jena): Optimal Weyl inequalities in Banach spaces
12. *C. Zanco* (Milano): Around Corson's theorem
13. *A. Giannopoulos* (Athens): Lower bound for the maximal number of facets of a 0/1 polytope
14. *J. Orihuela* (Murcia): Renormings of $C(K)$ spaces

Thursday, June 23

1. *E. Lindenstrauss* (Princeton): Eigenfunctions of the Laplacian on finite volume arithmetic manifolds
2. *A. Naor* (Microsoft): The Johnson–Lindenstrauss extension paper: 23 years later
3. *N. Tomczak-Jaegermann* (Edmonton, Alberta) Saturating normed spaces
4. *A. Pelczyński* (Warsaw): Structure of complemented subspaces of special Banach spaces
5. *A. Lindenstrauss* (Bloomington Indiana): Goodwillie calculus in algebraic topology
6. *M. Larsen* (Bloomington Indiana): Spectra of field automorphisms acting on elliptic curves
7. *A. Defant* (Oldenburg): A logarithmical lower bound for multidimensional Bohr radii
8. *I. Doust* (Sidney): The spectral type of sums of operators on non-Hilbertian Banach lattices

Friday, June 24 (Dead Sea, joint with the next conference)

1. *H. Koenig* (Kiel): Spherical design techniques in Banach spaces
2. *A. Naor* (Microsoft): Metric cotype and some of its applications
3. *J. Bourgain* (Institute for Advanced Study): Localization for the Anderson Bernoulli model and unique continuation

Asymptotic Geometric Analysis
In Honor of Nicole Tomczak-Jaegermann
(Dead Sea, June 24-27, 2005)

(Organizers and scientific committee: J. Bourgain, E. Gluskin, Y. Gordon,
P. Mankiewicz, V. Milman, E. Odell, G. Pisier)

Friday, June 24
Morning (joint with previous conference)

1. *H. Koenig* (Kiel): Spherical design techniques in Banach spaces
2. *A. Naor* (Microsoft): Metric cotype and some of its applications
3. *J. Bourgain* (Institute for Advanced Study): Localization for the Anderson Bernoulli model and unique continuation

Friday, June 24
Afternoon

4. *N. Tomczak-Jaegermann* (Edmonton), Random subspaces and quotients of finite-dimensional spaces
5. *B. Klartag* (Institute for Advanced Study): On John type ellipsoids
6. *S. Mendelson* (Canberra): Random projections and empirical processes

Sunday, June 26

1. *S.J. Szarek* (Paris): Entropy duality over the years
2. *A. Pajor* (Marne-la-Vallee): Geometry of random $(-1,+1)$ -polytopes
3. *N. Kalton* (Columbia, Missouri): The complemented subspace problem revisited
4. *P. Mankiewicz* (Warsaw): Low dimensional sections versus projections (joint work with N. Tomczak-Jaegermann)
5. *R. Latała* (Warsaw): Estimates of moments and tails of Gaussian chaoses
6. *S. Alesker* (Tel Aviv): Quaternionic pluripotential theory and its applications in convexity
7. *K. Oleszkiewicz* (Warsaw): Small ball probability estimates in terms of width – on two conjectures of R. Vershynin (joint work with R. Latała)

Monday, June 27

1. *A. Litvak* (Edmonton): Diameters of sections and coverings of convex bodies (joint work with N. Tomczak-Jaegermann and A. Pajor)
2. *T. Schlumprecht* (College Station, Texas): A separable reflexive Banach space which contains all separable uniformly convex spaces

Asymptotic Theory of the Geometry of Finite Dimensional Spaces

(Erwin Schrödinger Institute, Vienna, July 10 - August 5, 2005)

(Organizers: V. Milman, A. Pajor, C. Schütt)

Educational Talks:

Tuesday, July 12

1. *P.M. Gruber* (Vienna): Principles of classical discrete geometry
2. *S. Artstein* (Princeton): Metric entropy and coverings-duality

Wednesday, July 13

1. *I. Barany* (Budapest and London): On the power of linear dependencies
2. *C. Buchta* (Salzburg): What is the number of vertices of the convex hull of N randomly chosen points?
3. *K. Böröczky* (Budapest): Stability of affine invariant geometric inequalities

Thursday, July 14

1. *B. Klartag* (Clay Institute): Diameters of sections of convex bodies
2. *A. Koldobsky* (Columbia, Missouri):
3. *F. Barthe* (Toulouse): Entropy of spherical marginals

Friday, July 15

1. *W. Weil* (Karlsruhe): Boolean models and convexity
2. *R. Schneider* (Freiburg): Simplicies I

Monday, July 18

1. *R. Schneider* (Freiburg): Simplicies II
2. *N. Tomczak-Jaegermann* (Edmonton): Decoupling weakly dependent events

Tuesday, July 19

1. *A. Giannopoulos* (Athens): Random 0 – 1-polytopes
2. *G. Kalai* (Jerusalem): Fourier analysis of Boolean functions

Thursday, July 28

1. *L. Pastur* (Kharkov): A simple approach to the global regime of random matrix theory
2. *H. König* (Kiel): Spherical functions and Grothendieck's inequality
3. *M. Shcherbina* (Kharkov): Universality of local eigenvalue statistics for matrix models

Friday, July 29

1. *D. Cordero-Erausquin* (Marne-la-Vallee): L^2 -methods for Prekopa's theorem
2. *L. Pastur* (Kharkov): A simple approach to the global regime of random matrix theory

Monday, August 1

1. *R. Latała* (Warsaw): On majorizing measures
2. *K. Oleszkiewicz* (Warsaw): Kwapien's theorem

Thursday, August 4

1. *A. Stancu* (Montreal): Floating bodies

**First Annual Conference of the EU Network
“Phenomena in High Dimensions” Conference on
Convex Geometry and High Dimensional Phenomena
(Vienna, July 20-27, 2005)**

(Scientific Committee: P. Gruber, M. Ludwig, V. Milman, M. Reitzner,
C. Schuett)

Wednesday, July 20

1. *S. Alesker* (Tel Aviv): Theory of valuations on manifolds
2. *B. Klartag* (Tel Aviv): From isomorphic to almost-isometric problems in asymptotic convex geometry
3. *Z. Füredi* (Illinois and Budapest): Sets of few distances in highdimensional normed spaces
4. *Y. Gordon* (Haifa): Probabilistic min-max theorems revisited and applications to geometry
5. *R. Latała* (Warsaw): Moments and tail estimates for Gaussian chaoses
6. *H. Vogt* (Dresden): Central limit theorems in the W_2^k -norm for one-dimensional marginal distributions
7. *O. Guédon* (Paris): L_p moments of random vectors via majorizing measure
8. *J. Bastero* (Zaragoza): Upper estimates for the volume and the diameter of sections of symmetric convex bodies
9. *J. Bernués* (Zaragoza): Averages of k -dimensional marginal densities

Thursday, July 21

1. *L. Pastur* (Kharkov): Limiting laws of fluctuations of linear eigenvalue statistics of matrix models
2. *S. Szarek* (Paris and Cleveland): Tensor products of convex sets
3. *R. Vershynin* (Davis, California): Signal processing: geometric and probabilistic perspectives
4. *M. Shcherbina* (Kharkov): Double scaling limit for matrix models with non analytic potential
5. *P. Salani* (Firenze): A Brunn–Minkowski inequality for the Monge–Ampere eigenvalue
6. *M. Meckes* (Stanford): The central limit problem for random vectors with symmetries

7. *E. Meckes* (Stanford): Normal approximation under continuous symmetries
8. *A. Hinrichs* (Jena): Optimal geometric design of high dimensional cubature formulas
9. *K. Marton* (Budapest): Logarithmic Sobolev inequality for weakly dependent spin systems
10. *I. Ryshkova* (Kharkov): Nonlinear oscillation of a plate in a potential gas flow in the presence of thermal effects
11. *A.S. Shcherbina* (Kharkov): Solutions of dissipative Zakharov system

Friday, July 22

1. *I. Barany* (Budapest and London): Recent results on random polytopes
2. *R. Schneider* (Freiburg): Limit shapes in random mosaics and isoperimetric inequalities
3. *A. Koldobsky* (Columbia, MO): On the road from intersection bodies to polar projection bodies
4. *A. Giannopoulos* (Athens): Asymptotic formulas for proportional sections of convex bodies
5. *K. Boroczky, Jr.* (Budapest): Approximation of smooth convex bodies by circumscribed polytopes with respect to the surface area
6. *C. Peri* (Milano): Discrete tomography: Point X-rays of convex lattice sets
7. *G. Bianchi* (Firenze): The covariogram of 2-, 3- and 4-dimensional convex polytopes
8. *M.A. Hernandez Cifre* (Murcia): The Steiner polynomial and a problem by Hadwiger
9. *K. Bezdek* (Calgary and Budapest): On the illumination parameters of smooth convex bodies
10. *B.V. Dekster* (New Brunswick): The total angle around a point in Minkowski plane
11. *J.M. Aldaz* (Rioja): Behavior of the maximal function in high dimensions

Monday, July 25

1. *K. Ball* (London and Redmond): Markov type and the non-linear Maurey Extension Theorem
2. *A. Colesanti* (Firenze): A functional inequality related to the Rogers-Shephard inequality
3. *M. Fradelizi* (Marne-la-Vallée): On some functional forms of Santaló inequality
4. *G. Paouris* (Paris): Concentration of mass on the Schatten classes
5. *N. Markoulakis* (Heraklion): $-1/1$ polytopes with many facets
6. *F. Schuster* (Vienna): Geometric inequalities for rotation equivariant additive mappings

7. *P. Pivovarov* (Edmonton): A convex body lacking symmetric projections
8. *V. Yaskin* (Columbia, MO): The Busemann–Petty problem in hyperbolic and spherical spaces

Tuesday, July 26

1. *F. Barthe* (Toulouse): Functional approach to isoperimetry and concentration
2. *G. Pisier* (Paris): Similarity problems and amenability for groups and operator algebras
3. *J. Matousek* (Prague): Challenges of combinatorial linear programming
4. *G. Aubrun* (Paris and Athens): Sampling convex bodies: a random matrix approach
5. *V. Vengеровskiy* (Tel Aviv): Eigenvalue distribution of some ensembles of sparse random matrices
6. *T. Muller* (Budapest): The chromatic number of random geometric graphs
7. *E. Milman* (Rehovot): Using dual mixed-volumes to bound the isotropic constant
8. *G. Averkov* (Chemnitz and Firenze): Convex bodies with critical cross-section measures
9. *M. Naszodi* (Calgary): Ball-polytopes in Euclidean spaces

Wednesday, July 27

1. *Y. Brenier* (Nice): Optimal transportation of currents
2. *L. Lovasz* (Budapest and Redmond): Graph limits, Szemerédi’s Regularity Lemma, and some Banach spaces
3. *M. Krivelevich* (Tel Aviv): Smoothed analysis in graphs and boolean formulas
4. *G. Kalai* (Jerusalem): Noise sensitivity and noise stability, some recent results
5. *A. Pajor* (Marne-la-Vallée): Reconstruction and subgaussian operators

Lecture Notes in Mathematics

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