

## List of publications of Imre Bárány

1. A short proof of Kneser's conjecture, *J. Comb. Theory A*, **25** (1978), 325–326
2. On a common generalization of Borsuk's and Radon's theorem, *Acta. Math. Hung.* **34** (1978), 323–329 (with E. G. Bajmóczy)
3. On a class of balancing games, *J. Comb. Theory A* **26** (1979), 115–126
4. Borsuk's theorem through complementary pivoting, *Math. Programming* **18** (1980), 84–88
5. On a topological generalization of a theorem of Tverberg, *J. London Math. Soc.* **23** (1981), 158–164 (with S.B. Shlosman and A. Szűcs)
6. A vector sum theorem and its application to improving flow shop guarantees, *Math. Op. Res.* **6** (1981), 445–455
7. On some combinatorial questions in finite dimensional spaces, *Lin. Alg. Appl.* **41** (1981), 1–9 (with V.S. Grinberg)
8. Systems of representatives for sets whose convex hull contains zero, in *Algebraic methods in graph theory*, Colloquia Math. Soc. J. Bolyai **25** (1981), 19–25
9. A generalization of Charathéodory's theorem, *Discrete Math.* **40** (1982), 141–152
10. Borsuk's theorem and the number of facets of centrally symmetric polytopes, *Acta Math. Hung.* **40** (1982), 323–329 (with L. Lovász)
11. Quantitative Helly type theorems, *Proc. Amer. Math. Soc.* **86** (1982), 109–114 (with M. Katchalski and J. Pach)
12. Algorithms to compute fixed points of continuous maps, MNIIPU Publications, Moscow (in Russian), (1983)
13. Near optimal solutions of multimachine scheduling problems, *Szigma* **16** (1983), 17–35 (with T. Fiala), (in Hungarian)
14. Mental poker with three or more players, *Information and Control* **59** (1983), 84–93 (with Z. Füredi)
15. Discrete convex functions and proof of the six circle conjecture of L. Fejes Tóth, *Can. J. Math.* **36** (1983), 569–576 (with Z. Füredi and J. Pach)
16. Helly's theorem with volumes, *Amer. Math. Monthly* **78** (1984), 862–365 (with M. Katchalski and J. Pach)
17. Strong formulations for multiitem capacitated lot sizing, *Management Science* **30** (1984), 1255–1261 (with T. van Roy and L. A. Wolsey)
18. Uncapacitated lot sizing: the convex hull of solutions, *Math. Programming Study* **22** (1984), 32–43 (with T. van Roy and L. A. Wolsey)
19. A vector sum theorem in two-dimensional space, *Per. Math. Hung.* **16** (1985), 569–576 (with V.S. Grinberg)
20. Covering all secants in a square, in: *Intuitive Geometry*, Colloquia Math. Soc. J. Bolyai **48** (1985), 19–27 (with Z. Füredi)
21. Packing and covering a tree by subtrees, *Combinatorica* **6** (1986), 135–138 (with J. Edmonds and L.A. Wolsey)
22. Maximal volume enclosed by plates and proof of the chessboard conjecture, *Discrete Math.* **60** (1986), 101–120 (with K. Böröczky, E. Makai Jr. and J. Pach)
23. A characterization of the Helly dimension of convex bodies, *Studia Math. Hung.* **22** (1987), 402–406 (with J. Kincses)

24. Covering with Euclidean boxes, *European J. Comb.* **8** (1987), 113–119 (with J. Lehel)
25. An extension of the Erdős–Szekeres theorem on large angles, *Combinatorica* **7** (1987), 161–169
26. Computing the volume is difficult, *Discrete and Comput. Geometry* **2** (1987), 319–326, and *Proc. 18th ACM–STOC* (1986), 442–447 (with Z. Füredi)
27. Empty simplices in Euclidean space, *Can. Math. Bull.* **30** (1987), 436–445 (with Z. Füredi)
28. On the minimal ring containing the boundary of a convex body, *Acta Math. Szeged* **52** (1988), 93–100
29. Approximation of the sphere by polytopes having few vertices, *Proc. Amer. Math. Soc.* **102** (1988), 651–660 (with Z. Füredi)
30. On the shape of the convex hull of random points, *J. Prob. Theory and Appl.* **77** (1988), 231–240 (with Z. Füredi)
31. Convex bodies, economic cap coverings, random polytopes, *Mathematika* **35** (1988), 279–291 (with D.G. Larman)
32. Stability of the densest circle packing in the plane, *Monatshäfte Math.* **106** (1988), 107–114 (with N.K. Dolbilen)
33. Rearrangement of series in infinite dimensional spaces, *Mat. Zametki* **46** (1989), 10–17 (in Russian)
34. Intrinsic volumes and  $f$ -vectors of random polytopes, *Math. Annalen* **285** (1989), 671–699
35. A combinatorial result about points and balls in Euclidean space, *Discrete Comp. Geometry* **4** (1989), 259–262 (with J.H. Schmerl, S.J. Sidney and J. Urrutia)
36. The Carathéodory number for the  $k$ -th core, *Combinatorica* **10** (1990), 185–195 (with M. Perles)
37. A combinatorial property of points and ellipsoids, *Discrete Comp. Geometry* **5** (1990), 375–382 (with D.G. Larman)
38. Diameters of typical convex sets, *Can. J. Math.* **52** (1990), 50–61 (with T. Zamfirescu)
39. On the number of halving planes, *Combinatorica* **10** (1990), 175–185, and *Proc. 5th Symp. Comp. Geom.*, (1989), 140–144 (with Z. Füredi and L. Lovász)
40. On affinely embeddable sets in the projective plane, *Acta Math. Hung.* **56** (1990), 137–141
41. On the convex hull of uniform random points in an arbitrary  $d$ -polytope, *Anz. Öster. Akad. Wiss. Math.-Natur.* **77** (1990), 25–27 (with C. Buchta)
42. On the expected number of  $k$ -sets, *Proc. 2nd Can. Conf. Comp. Geom.* (1990), 55–59 (with W. Steiger)
43. Do projections go to infinity? in: *The Victor Klee Festschrift* (ed. P. Gritzman and B. Sturmfels), DIMACS series no **4** (1991), 51–63 (with J.E. Goodman and R. Pollack)
44. On the convex hull of the integer points in a disk, in: *Discrete and Computational Geometry* (ed. J.E. Goodman, R. Pollack, and W. Steiger), DIMACS Series no **6** (1991), 39–44, and *Proc. 7th Symp. Comp. Geom.* (1991), 162–165 (with A. Balog)

45. Fair distribution protocols or how the players replace fortune, *Math. Op. Res.* **17** (1992), 327–340
46. On integer points in polyhedra: a lower bound, *Combinatorica* **12** (1992), 135–142 (with R. Howe and L. Lovász)
47. A coloured version of Tverberg’s theorem, *J. London Math. Soc.* (2) **45** (1992), 314–320 (with D.G. Larman)
48. On the number of convex lattice polygons, *Combinatorics, Probability, and Computation* **1** (1992), 295–302 (with J. Pach)
49. Random polytopes in smooth convex bodies, *Mathematika* **39** (1992), 81–92
50. The intrinsic level of competitive structure in a matrix game, *Intern. J. Game Theory* **21** (1992), 267–290 (with J. Lee and M. Shubik)
51. Point selections and weak  $\epsilon$ -nets for convex hulls, *Combinatorics, Probability, and Computation* **1** (1992), 189–200 (with N. Alon, Z. Füredi, and D. Kleitman)
52. On the number of convex lattice polytopes, *Geom. Functional Analysis* **2** (1992), 381–393 (with A. M. Vershik)
53. Geometric and combinatorial applications of Borsuk’s theorem: a survey, in: *New trends in computational geometry* (ed. J. Pach) (1993), 235–250
54. Reflecting a triangle in the plane, *Graphs and Combinatorics* **9** (1993), 97–104, (with P. Frankl and H. Maehara)
55. Random polytopes in a convex polytope, independence of shape, and concentration of vertices, *Math. Annalen*, **297** (1993), 467–497, (with C. Buchta)
56. Random convex hulls: floating bodies and expectations, *J. Approximation Theory* **75** (1993), 130–135, (with R. Vitale)
57. On the expected number of  $k$ -sets, *Discrete and Comp. Geom.*, **14** (1994), 185–206, (with W. Steiger)
58. The complex of maximal lattice free simplices, *Math. Programming* **66** (1994), 273–282, and *3rd IPCO* (1993), (with R. Howe, and H. E. Scarf)
59. A note on the path-discrepancy of trees, *Studia Math. Hung.* **30** (1995), 13–15, (with Gy. Károlyi)
60. The densest  $(n + 2)$ -set in  $R^n$ , in *Intuitive Geometry*, Colloquia Math. Soc. J. Bolyai **63** (1991), 7–10.
61. The exact constant in the quantitative Steinitz theorem, *Discrete and Comp. Geom.* **12**, (1994), 387–398 (with A. Heppes)
62. Rich cells in an arrangement of hyperplanes, *Lin. Alg. Appl.* **226–228** (1995), 567–575, (with H. Bunting, D. G. Larman, J. Pach)
63. The limit shape of convex lattice polygons, *Discrete and Comp. Geom.*, **13**, (1995), 279–295.
64. Barycentric subdivisions and Möbius transformations, *Mathematika*, **43**, (1996), 165–179 (with A.F. Beardon and T.K. Carne)
65. The topological structure of maximal lattice free convex bodies: the general case, to appear in *Math. Programming*, (1996) (with H.E. Scarf and D. Shallcross), and *Fourth IPCO*, 1995, Copenhagen, 244–252.
66. Carathéodory’s theorem, colourful and applicable, *Bolyai Society Math. Studies*, **6** *Intuitive geometry*, (ed.: I. Bárány, K. Böröczky) (1997), 11–22 (with S. Onn)

67. Colourful linear programming, in: Integer Programming and Combinatorial Optimization, 5th IPCO proceedings, Lecture Notes in Computer Science 1089, Springer Verlag, 1996, 1–15, (with S. Onn).
68. Affine perimeter and limit shape, *J. reine und ang. Mathematik* **484** (1997), 71–84.
69. Colourful linear programming and its relatives, *Math. OR* (1997), **22**, 550–567, (with S. Onn).
70. Few points to generate a random polytope, *Mathematika*, **44** (1997), 325–331, (with L. Dalla)
71. Approximation by random polytopes is almost best possible, *Rendiconti di Palermo*, **50** (1997), 43–50.
72. Positive fraction Erdős–Szekeres theorem, *Discr. Comp. Geometry*, **19** (1998), 335–342, (with P. Valtr)
73. The convex hull of the integer points in a large ball, *Math. Annalen*, **312** (1998), 167–181, (with D.G. Larman)
74. Matrices with identical sets of neighbors, *Math OR*, **23** (1998), 863–873, (with H. E. Scarf)
75. The topological structure of maximal lattice free convex bodies: the general case, *Math. Programming*, **88** (1998), 1–17, (with H.E. Scarf and D. Shallcross)
76. Universal counting of lattice points, *Publ. de l’Institute Math. Belgrade*, (1999), **66**, 17–22, (with J-M. Kantor)
77. Central limit theorem for random convex chains, *Discrete Comp. Geom.*, **23** (2000), 35–50 (with G. Rote, W. Steiger, C-H. Zhang)
78. On the number of empty simplices, *European J. Comb.*, **21** (2000), 103–110, (with J-M. Kantor)
79. Sylvester’s question: the probability that  $n$  points are in convex position, *Annals of Probability*, **27** (2000), 2020–2034.
80. The technique of  $M$ -regions and cap-coverings: a survey, *Rendiconti di Palermo*, **65** (2000), 21–38.
81. Simultaneous partition of measures by  $k$ -fans, *Discrete Comp. Geom*, **25** (2001), 317–334, (with J. Matousek)
82. Covering lattice points by subspaces, *Periodica Math. Hung.*, **43** (2001), 93–103, (with G. Harcos, J. Pach, G. Tardos)
83. A note on Sylvester’s four-point problem, *Studia Math. Hung.*, **38** (2001), 73–77.
84. The lattice diameter of a convex polygon, *Discrete Math.*, **241** (2001), 41–50. (with Z. Füredi).
85. Problems and results around the Erdős-Szekeres theorem, *Japanese Conference on Discrete Comp. Geometry* (2001), 91–105, (with Gy. Károlyi)
86. On 0-1 polytopes with many facets, *Advances in Math.*, **161** (2001), 209–228 (with A. Pór)
87. Equipartition of two measures by a 4-fan, *Discrete Comp. Geom.*, **27** (2002), 293–301, (with J. Matousek)
88. Random points, convex bodies, lattices, *Proceedings of the International Congress of Mathematicians*, 2002, Beijing, Vol III, 527–536

89. Approximation by random polytopes is of low complexity, *Rendiconti di Palermo*, **70** (2002), 53–56
90. Integer points on the boundary of the integer hull, in *Discrete Geometry*, ed.: A. Bezdek, 2003, Marcel Dekker, New York, 33–48, (with K. Böröczky Jr)
91. A fractional Helly theorem for convex lattice sets, *Advances in Math.*, **174** (2003), 227–235, (with J. Matousek)
92. Total curvature and spiralling shortest paths, *Discrete Comp. Geom.*, **30** (2003), 167–176, (with K. Kuperberg and T. Zamfirescu)
93. Integer points in rotated convex bodies, Discrete and Computational Geometry, 177–201, *Algorithmic Combinatorics* **25**, Springer, Berlin, 2003 (with J. Matousek)
94. The minimum area convex lattice  $n$ -gon, *Combinatorica*, **24** (2004), 171–185, (with N. Tokushige)
95. Randomized integer hull *Discr. Comp. Geom.*, **33** (2005), 3–25, (with J. Matousek)
96. A case when the union of polytopes is convex, *Lin. Alg. Appl.*, **397** (2005), 381–388, (with Komei Fukuda)
97. Planar point sets with few empty convex polygons, *Studia Math. Hung.*, **41** (2004), 243–266, (with P. Valtr)
98. Discrete and convex geometry, in: A Panorama of Hungarian Mathematics in the Twentieth Century, ed.: J. Horváth, Bolyai Society Mathematical Studies **14** (2006), 427–456
99. A note on the size of the largest ball inside a convex polytope, *Periodica Math. Hung.* **51** (2005), 15–18. (with Nándor Simányi)
100. Geometric applications of graph and hypergraph theory, in Combinatorial and computational geometry, (ed.: J E Goodman et al.) MSRI publications, **52** (2005) 31–50 (Cambridge Univ. Press).
101. Nash equilibria in random games, Proc. 46th Symposium on the Foundations of Computer Science (FOCS), 2005, 123–131, and *Random Structures and Alg.*, **31** (2007) 391–405. (with Santosh Vempala, Adrian Vetta)
102. Berge’s theorem, fractional Helly, and art galleries, *Discrete Math.* **306** (2006), 2303–2313, (with J. Matousek)
103. Balanced partitions of vector sequences, *Lin. Alg. Appl.*, **414** (2006), 464–469, (with B. Doerr)
104. On maximal convex lattice polygons inscribed in a plane convex set, *Israel J. Math.* **154** (2006), 337–360. (with M. Prodromou)
105. Convex bodies, random polytopes, and approximation, Chapter in Stochastic Geometry, ed. W. Weil, Springer, 2007
106. The probability that a convex body is lattice point free: a relative of Buffon’s needle problem, *Random Structures and Alg.* **30** (2007), 414–426
107. Strictly convex drawings of planar graphs, *Documenta Math.*, **11** (2006), 369–391. (with Günter Rote)
108. Central limit theorems for Gaussian polytopes, *Annals of Prob.* **35** (2007), 1593–1621, (with Van H Vu)

109. Quadratic lower bound for the number of colourful simplices, *SIAM J. Discrete Math.* **21** (2007), 191–198, (with J. Matousek)
110. Packing cones and their negatives in space, *Discrete Comp. Geom.* **38** (2007), 177–187, (with J. Matousek)
111. Slicing convex sets and measures by a hyperplane, *Discrete Comp. Geom.*, **39** (2008), 67–75, (with A. Hubard, J. Jeronimo)
112. Extremal problems for convex lattice polytopes: a survey, in: Contemporary Mathematics **453**, Surveys on Discrete and Comp. Geometry, Ed.: J. E. Goodman et al. AMS, Providence, RI (2008), 87–103
113. Random points and lattice points in convex bodies, *Bulletin of the AMS*, **45** (2008), 339–365
114. On the power of linear dependencies, in: Building Bridges, ed: M. Grötschel, G.O.H Katona, Springer, 2008, 31–46
115. Very Colourful theorems, *Discrete Comp. Geom.* **42** (2009), 142–154 (with J. Arocha, X. Bracho, R. Fabilla, L. Montajano)
116. Longest convex chains, *Random Structures and Alg.* **35** (2009), 137–162, (with G. Ambrus)
117. Paths with no small angle, *SIAM J. Discrete Math.*, **23** (2009), 1655–1666 (with A Pór, P Valtr)
118. Equipartitions by a convex 3-fan, *Advances in Math.*, **223** (2010), 579–593, (with P. Blagojević, A. Szűcs)
119. Poisson polytopes, *Annals Prob.*, **38** (2010), 1507–1531 (with M. Reitzner)
120. Infinite paths with no small angle, *Mathematika*, **56**(2009), 35–44, (with A. Pór)
121. The variance of random polytopes, *Advances in Math.*, **225** (2010), 1986–2001, (with M. Reitzner)
122. Every points is critical, submitted (2009), (with J-I. Ito, A. Vilcu, T. Zamfirescu)
123. Intrinsic volumes of inscribed random polytopes in smooth convex bodies, *Annals of Appl. Prob.*, **42** (2010), 605–619, (with F. Fodor, V. Vigh)
124. Jarnik’s convex lattice polygon for non-symmetric norms, accepted in Math. Zeitschrift (2010) (with N. Enriquez)
125. Functions, measures, and equipartitioning convex  $k$ -fans, submitted 2010 (with P. Blagojević and A. Dmitrijević Blagojević)
126. On the variance of random polygons, accepted in Comp. Geom. Theory Appl. (2011) (with W Steiger)
127. Tetrahedra passing through a triangular hole, and tetrahedra fixed by a planar frame *Comp. Geom: Theory and Appl*, **45** (2012), 14–20 (with H. Maehara and N Tokushige)
128. Longest convex lattice chains in triangles (with Edgardo Roldan Pensado) submitted to Comp. Geom. Theory Appl. (2011)
129. Homogeneous selections from hyperplanes (with J. Pach) submitted to JCT B (2011)
130. On a question of V. I. Arnold, accepted in Acta Math Hung
131. Notes on the Carathéodory number (with Roman Karasev)