

## PUBLICATIONS OF TAMÁS SZŐNYI

### Book

1. *Finite geometries*, in Hungarian, (with György Kiss), *Polygon Kiadó*, Szeged, 2001, 217 pages.

### Papers in journals

1. “Small complete arcs in Galois planes”, *Geom. Ded.* **18** (1985), 161–172.
2. “On the sharpness of a theorem of B. Segre” (with Endre Boros), *Combinatorica*, **6** (1986), 261–268.
3. “Sperner Extensions of Affine Spaces” (with Endre Boros, and Ferenc Wettl) *Geom. Ded.* **22** (1987), 163–172.
4. “Note on the order of magnitude of  $k$  for complete  $k$ -arcs in  $PG(2, q)$ ”, *Discrete Math.* **66** (1987), 261–264.
5. “On complexes in a finite abelian group”, (with Ferenc Wettl), *Proc. Japan. Acad. Sci.* **64** (1988), I: 245–248, II: 286–287.
6. “Complete arcs in non-desarguesian planes”, *Ars. Comb.* **25C** (1988), 169–178.
7. “Arcs and  $k$ -sets with large sets of nuclei in Hall planes”, *J. of Geometry* **34** (1989), 187–194.
8. “Planar function over finite fields” (with Lajos Rónyai), *Combinatorica* **9** (1989), 315–320.
9. “Planar functions over the reals”, *Note di Mat. (Lecce)* **X** (1990), 59–65.
10. “Irregular weightings of finite projective planes”, (with Jenő Lehel), *Ars. Comb.* **29C** (1990), 160–167.
11. “Note on the existence of large minimal blocking sets in  $PG(2, q)$ ”, *Combinatorica* **12** (1992), 227–235.
12. “Sets in a finite plane with few intersection numbers and a distinguished point”, (with James Hirschfeld), *Discrete Math.* **97** (1991), 229–242.
13. “Large arcs and minimal blocking sets in planes of square order”, (with James Hirschfeld), *Europ. J. Comb.* **12** (1991), 499–511.
14. “Small complete arcs in André planes of square order”, *Graphs and Combinatorics* **7** (1991), 279–287.
15. “Note on the structure of semiovals”, (with Aart Blokhuis), *Discr. Math.*, **106/107** (1992), 61–65.
16. “Irregular weightings of 1-designs”, (with Aart Blokhuis), *Discrete Math.* **131** (1994), 339–343.

17. “Sets having a large number of nuclei on a conic” (with Aart Blokhuis), *J.C.T. (A)* **63** (1993) 164–173.
18. “Note on a problem of Kaneta concerning arcs in  $PG(3, q)$ ”, (with Leo Storme), *Atti Sem. Mat. Fis. Univ. Modena* **XLI** (1993) 409–416.
19. “The number of directions determined by a function  $f$  on a finite field”, (with Aart Blokhuis and Andries Brouwer), *J. C. T. (A)* **70** (1995), 349–353.
20. “Caps in  $PG(n, q)$ ,  $q$  even,  $n \geq 3$ ”, (with Leo Storme), *Geo. Ded.*, **45** (1993) 163–169.
21. “Intersection of arcs and normal rational curves in spaces of even characteristic (with Leo Storme), *J. of Geometry* **51** (1994) 150–166
22. “Space-filling subsets of normal rational curves”, (with Gábor Korchmáros and Leo Storme) *J. Stat. Planning and Inference*, **58** (1997), 93–110.
23. “On the number of directions determined by a set of points in an affine Galois plane”, *J. C. T. (A)* **74** (1996), 141–146.
24. “On cyclic caps in projective spaces” *Designs, Codes, and Cryptography* **8** (1996), 327–332.
25. “Caps in projective spaces of odd order, (with Gábor Nagy), *J. of Geom.* **59** (1997), 103–113.
26. “Two remarks on blocking sets and nuclei in planes of prime order”, (with András Gács and Péter Sziklai), *Designs, Codes and Cryptography* **10** (1997), 29–39.
27. “Some multiply derived translation planes with  $SL(2, 5)$  as an inherited collineation group in the translation complement” (with Arrigo Bonisoli and Gábor Korchmáros), *Designs, Codes and Cryptography* **10** (1997), 109–114.
28. “Blocking sets of almost Rédei type” (with Aart Blokhuis and Ruud Pellikaan), *J.C.T. (A)* **78** (1997), 141–150.
29. “Blocking sets in Desarguesian affine and projective planes”, *Finite Fields and their Appl.* **2** (1997), 187–202.
30. “Blocking sets and algebraic curves”(with Péter Sziklai), *Rend. Circolo Mat. Palermo* **51** (1998), 71–86.
31. “Caps embedded in Grassmannian Surfaces” (with Gary L. Ebert and Klaus Metsch), *Geom. Dedicata* **70** (1998), 181–196.
32. “ $(k, n)$ -arcs in Galois planes, *Rend. Circ. Mat. Palermo* **53** (1998), 193–198.
33. “Around Rédei’s theorem”, *Discrete Math.* **208/9** (1999), 557–575
34. “On the number of slopes of the graph of a function defined on a finite field” (with Aart Blokhuis, Simeon Ball, Andries Brouwer and Leo Storme), *J. Comb. Theory Ser. (A)* **86** (1999), 187–196.
35. “The number of rational points on Fermat curves over finite fields and cyclic subsets of projective spaces” (with Gábor Korchmáros), *Finite Fields and Appl.* **5** (1999), 206–217
36. “On the embedding of  $(k, p)$ -arcs in maximal arcs”, *Designs, Codes and Cryptography* **18** (1999), 235–246.

37. “Blocking sets in Galois planes of square order” (with Olga Polverino and Zsuzsa Weiner), *Acta Sci. Math. (Szeged)* **65** (1999), 737–748.
38. “Multiple blocking sets in Desarguesian planes” (with Aart Blokhuis and Leo Storme), *J. London Math. Soc.*, **60** (1999), 321–332.
39. “Covers and blocking sets of classical generalized quadrangles”, (with Jörg Einfeld, Leo Storme and Péter Sziklai), *Discrete Math.* **238** (2001), 35–51.
40. “Small blocking sets in higher dimensions”, (with Zsuzsa Weiner), *J.C.T. (A)* **95** (2001), 88–101.
41. “On embedding large  $(k, n)$ -arcs and partial unitals”, (with Éva Hadnagy), *Ars Combinatoria* **56** (2002), 299–308.
42. “On maximal partial spreads in  $PG(n, q)$ ” (with András Gács), *Designs, Codes, and Cryptography* **29** (2003), 123–129.
43. “On sets without tangents in Galois planes of even order”, (with Aart Blokhuis and Zsuzsa Weiner), *Designs, Codes, and Cryptography* **29** (2003), 91–98
44. “On the spectrum of minimal blocking sets” (with András Gács and Zsuzsa Weiner), *J. of Geometry* **76** (2003), 256–281.
45. “On large minimal blocking sets” (with Antonello Cossidente, András Gács, Csaba Mengyán, Alessandro Siciliano and Zsuzsa Weiner), *J. Combinatorial Designs*, **13** (2005), 25–41.
46. “Defining sets for  $PG(2, q)$ ”, (with Endre Boros, Krisztián Tichler), *Discrete Math.* **303** (2005), 17–31.
47. “On disjoint blocking sets” (with János Barát, Fernanda Pambianco, Stefano Marcugini), *J. Combinatorial Designs*, 14 (2006), 149–158.
48. “On Multiple blocking sets in Galois planes”, (with Aart Blokhuis, László Lovász, Leo Storme), *Adv. Geom.* **7** (2007), 39–53.
49. “Affinely regular polygons in an affine plane” (with Gábor Korchmáros), *Contributions to Discrete Mathematics* **3** (2008), 20–38 (electronic)
50. “Ferenc Kárteszi (1907-1989): a short biography” (with G. Korchmáros), *Contributions to Discrete Mathematics* **3** (2008), 3-5 (electronic)
51. “Graphs with the  $n$ -e.c. adjacency property constructed from affine planes”, (with Cathy Baker, Anthony Bonato, Julia Brown), *Discrete Math.* **308** (2008), 901–912.
52. “Random constructions and density results”, (with András Gács), *Designs, Codes and Cryptography* **47** (2008), 267–287.
53. “Directions in  $AG(2, p^2)$ ”, (with A. Gács, L. Lovász), *Innovations in Incidence Geometry*, **6/7** (2009), 189–201.
54. “A Hilton-Milner theorem for vector spaces”, (with Aart Blokhuis, Andries Brouwer, Ameera Chowdhury, Péter Frankl, Tim Mussche, Balázs Patkós), *Electron. J. Combin.* **17** (2010), no. 1, Research Paper 71, 12 pp.
55. “Covering all points except one”, (with Aart Blokhuis, Andries Brouwer), *J. Algebraic Combin.* **32** (2010), 59-66.
56. “Small point sets of  $PG(n, p^{3h})$  intersecting each line in  $1 \pmod{p^h}$  points”, (with Nóra Harrach, Klaus Metsch, Zsuzsa Weiner), *J. Geom.* **98** (2010), 59-78.

57. “Proof of a conjecture of Metsch”, (with Zsuzsa Weiner), *J. Combin. Theory Ser. A* **118** (2011), 2066-2070.
58. “ $q$ -analogues and stability”, (with Aart Blokhuis, Andries Brouwer, Zsuzsa Weiner), *J. Geom.* **101** (2011), 31-50.

### Papers in refereed conference proceedings

1. “Beágyazási problémák desarguesi síkokon”, (with Ferenc Wettl), *Periodica Polytechnica* (1983), 111–116.
2. “Arcs in cubic curves and 3-independent subsets”, *Proc. 7<sup>th</sup> Hungarian Coll. on Combinatorics* (1988), 499–508.
3. “Complete arcs in non-desarguesian planes”, *Conf. Sem. Mat. Univ. Bari*, **233**, (1990)
4. “Combinatorial problems for abelian groups arising from geometry”, *Periodica Polytechnica* **19** (1991), 91–100.
5. “ $k$ -sets in  $PG(2, q)$  with a large set of internal nuclei”, in: *Proc. Combinatorics’88*, (A. Barlotti et al. szerk.), Mediterranean Press, 1991, 449–458.
6. “Complete arcs in  $PG(2, q)$ : a survey”, *Quad. Sem. Geom. Comb. Univ. “La Sapienza”*, Roma **n. 94** (1989)
7. “Maximal strong representative systems and minimal blocking sets” (with Tibor Illés and Ferenc Wettl), *Mitt. Math. Sem. Giessen* **201** (1991), 97–107.
8. “A problem on squares in a finite field and its application to geometry” (with James Hirschfeld), *Proc. 3rd Isle of Thorns Conf.*, Oxford U.P., 149–156.
9. “Projective spaces and colouring of  $K_m \times K_n$ ”, (with Ralph Faudree and András Gyárfás), in: *Proc. Conf. “Sets, Graphs and Numbers”*, Hungary 1991), 273–278.
10. “Orthogonally divergent spreads of Hermitian curves” (with Ron Baker, Gary L. Ebert and Gábor Korchmáros), *Proc. 2nd Intern. Deinze Conf. on Finite Geometry* (F. De Clerck et al. szerk.), Cambridge Univ. Press, 17–30.
11. “Blocking sets in finite planes and spaces”, *Ratio Math.* **5** (1992) 93–106.
12. “Intersection of arcs and normal rational curves in spaces of odd characteristic”, (with Leo Storme), *Proc. 2nd Intern. Deinze Conf. on Finite Geometry*, (F. De Clerck et al. szerk.), Cambridge Univ. Press, 359–378.
13. “Complete arcs in planes and spaces, independent subsets in Abelian groups and error-correcting codes”, in: *Giornate di Geometrie Combinatorie* (Perugia) (G. Faina, G. Tallini szerk.), 1993, 57–80.
14. “Some applications of algebraic curves in finite geometry and combinatorics”, in: *Surveys in Combinatorics, Proc. British Comb. Conf. 1997* (ed. R. A. Bailey), 197–236.

To appear

1. “On the chromatic number of  $q$ -Kneser graphs”, (with A. Blokhuis, A.E. Brouwer), *Designs, Codes and Cryptography*, (2012), to appear
2. “A stability theorem for lines in Galois planes of prime order”, (with Zsuzsa Weiner), *Designs, Codes and Cryptography*, (2012), to appear
3. “Blocking sets in projective spaces”, (with A. Blokhuis, P. Sziklai), in: *Current research topics in Galois geometry* (eds: J. De Beule, L. Storme), NOVA Publishers, to appear

### Submitted

1. “Cages, geometries and Zarankiewicz’ problem”, (with Gábor Damásdi, Tamás Héger), submitted to *Annales Univ. Eötvös Loránd*

### Dissertations

1. “Teljes ívek Galois-geometriákban” (“Complete arcs in Galois geometries”), thesis for the title Dr. univ., ELTE, Budapest, (1987)
2. “Aszimptotikus eredmények a véges geometriákban” (Asymptotic results in finite geometries), thesis for the title Candidate of Sciences of the Hungarian Academy, 1990
3. “Kombinatorikus problémák a Galois-geometriákban” (“Combinatorial problems in Galois geometries”), thesis for the title Doctor of the Academy, Hungarian Academy of Sciences, 1999