

# Curriculum vitae of Marco Buratti

## Education

July 17, 1985. Master degree in Mathematics.  
Summa cum Laude at the University “La Sapienza” of Rome.

## Appointments

### Academic appointments

September 1, 2022 to current:  
Full Professor of Geometry at the Faculty of Engineering of the University  
“Sapienza” of Rome, Italy.

February 6, 2006 to August 31, 2022:  
Full Professor of Geometry at the Faculty of Engineering of the University of  
Perugia, Italy.

January 11, 1999 to June 5, 2006:  
Associate Professor of Geometry at the Faculty of Engineering of the University  
of Perugia, Italy.

November 4, 1991 to January 10, 1999:  
Assistant Professor of Geometry at the Faculty of Engineering of the University  
of L’Aquila, Italy.

## Editorial Work

Member of the Editorial Board of:

*Ars Mathematica Contemporanea* (since 2021);  
*Journal of Combinatorial Theory A* (since 2021);  
*Art of Discrete Applied Mathematics* (since 2017);  
*Designs, Codes and Cryptography* (since 2017);  
*Journal of Combinatorial Designs* (since 1999).

Associate Editor of

*Discrete Mathematics* (since 2013).

Editor in chief of

*Bulletin of the Institute of Combinatorics and its Applications* (since 2016).

## Other appointments

September 18, 2005 to May 21, 2023:

Collaborator of “Il Sole 24 ore” (Italy’s leading economic newspaper) with a weekly brief column about palindromes.

September 1, 1987 to November 3, 1991:

Tenured Math teacher at Liceo Scientifico “Ettore Majorana” of Guidonia (Roma).

## Ph.D. Students

Simone Costa, *New combinatorial designs via strong difference families*, Ph.D. in Mathematics, 2016.

Simone is currently Assistant Professor of Geometry at the University of Brescia.

Emanuele Brugnoli, *Graph decompositions via integer compositions*, Ph.D. in Mathematics, 2016.

Emanuele is currently a Senior Data Scientists at Agicom.

Tommaso Traetta, *Factorizations of the Complete Graph and the Oberwolfach Problem*, Ph.D. in Mathematics, 2010.

Tom is currently Associate Professor of Geometry at the University of Brescia.

Anita Pasotti, *Graph decompositions with a sharply vertex transitive automorphism group*, Ph.D. in Mathematics, 2006.

Anita is currently Associate Professor of Geometry at the University of Brescia.

## Organization

Organizer and member of the Scientific Committee of “Combinatorics 2024” (Carovigno, Italy, June 3 – 7, 2024).

Member of the Scientific Committee of “Combinatorial Constructions Workshop” (Zagreb, Croatia, June 27 – 29, 2022).

Organizer and member of the Scientific Committee of “Combinatorics 2022” (Mantova, Italy, May 30 – June 3, 2022).

Organizer of Minisymposium MS-16 “Combinatorial Designs” at the 8th European Congress of Mathematics (Portoroz, Slovenia, June 20 – 26, 2021).

Member of the Scientific Committee of “Combinatorics 2018” (Arco di Trento, Italy, June 3 – 9, 2018).

Main organizer of “Discretaly, a workshop in Discrete Mathematics” (Roma, Italy, February 1 – 2, 2018).

National coordinator of the Italian research group related to the International biennial conference “Combinatorics” since June 2016.

Member of the Scientific Committee of “Combinatorics 2016” (Maratea, Italy, May 29 – June 4, 2016).

## Society memberships, Awards and Honors

Honorary Member of the *Slovenian Discrete and Applied Mathematics Society* since 2020.

2010 – 2021. Council Member of the *Institute of Combinatorics and its Applications*.

Hall Medal 1998 “For outstanding contributions in Combinatorics and its Applications”. Received at the University of Canterbury during the *17th British Combinatorial Conference* (July, 1999).

Fellow of the Institute of Combinatorics and its Applications (since 1994).

## Scientific activity

### Keywords.

Combinatorial Designs; Codes; Groups; Finite Fields; Difference Methods.

### Brief description.

The core of Marco Buratti’s research is the existence and construction of discrete structures with many symmetries, i.e., with a rich automorphism group. In his research he invented and developed several variants of the algebraic method known as the “method of differences”. This is a powerful tool which allowed him to find more elegant (because highly symmetric) solutions of some problems already solved in the past as, for instance, the existence of a  $(2n + 1)$ -cycle decomposition of a complete graph for every  $n$ . In some cases it allowed him to also find combinatorial designs whose existence was in doubt as, for instance, a resolvable  $2 - (45, 5, 2)$  design. His most remarkable results are about cyclic 2-designs, resolvable 2-designs, and cycle decompositions of the complete graph.

## Scientific visits

May 2017. Zhejiang University, Hangzhou, China.

July 2016. Nanjing Normal University, Nanjing, China.

July 2016. Jiangnan University, Wuxi, China.

May 2015. Primorska University, Koper, Slovenia.

August 2014. Guangxi Normal University, Guilin, China.

March 2014. University of York, York, United Kingdom.

June 2012. Soochow University, Suzhou, China.

May 2011. Jiao Tong University, Shanghai, China.

November 2009. Kindai University, Osaka, Japan.

## Reviewer activity

### Referee

He served as a referee (multiple times) for the following 32 journals.

Advances in Mathematics of Communication; Applied Mathematics and Computation; Ars Mathematica Contemporanea; Acta Scientiarum Mathematicarum; Applicable Algebra in Engineering Communication and Computing; Ars Combinatoria; Australasian Journal of Combinatorics; Bulletin of the Institute of Combinatorics and its Applications; Combinatorica; Communications in Combinatorics and Optimization; Cryptography and Communications; Designs, Codes and Cryptography; Discrete Applied Mathematics; Discrete Mathematics; Discussiones Mathematicae Graph Theory; Electronic Journal of Combinatorics; European Journal of Combinatorics; Examples and Counterexamples; Finite fields and their Applications; Frontiers of Mathematics in China; Graphs and Combinatorics; IEEE Transactions of Information Theory; International Journal of Foundations of Computer Science; Journal of Algebra and its Applications; Journal of Algebraic Combinatorics; Journal of Applied Mathematics and Computing; Journal of Combinatorial Designs; Journal of Combinatorial Theory (Series A); Mathematical Biosciences and Engineering; Proceedings of the American Mathematical Society; Siam Journal on Discrete Mathematics; Utilitas Mathematica.

### Grant proposal reviewer

He served as a reviewer (multiple times) for the following 7 Research Funding Organizations.

NSERC, Natural Sciences and Engineering Research Council of Canada.

HRZZ, The Croatian Science Foundation.

BIRS, The Banff International Research Station (Canada).

Koç University (Istanbul).

FWO, The Research Foundation Flanders (Belgium).

Nanyang Technological University (Singapore).

ARRS, The Slovenian Research Agency.

He also served as a reviewer of

*Mathematical Reviews.*

*Zentralblatt für Mathematik.*

## Publications

### Submitted papers

- [106] M. Buratti, A. Nakic, *Additivity of symmetric and subspace 2-designs*.

### Refereed papers

- [105] *Tight Heffter arrays from finite fields*, to appear in New Advances in Designs, Codes and Cryptography, C.J. Colbourn and J.H. Dinitz Editors, Fields Institute Communications **86** (2023), <https://arxiv.org/abs/2210.16672>
- [104] H. Zhao, R. Qin, M. Buratti, D. Wu, *A few more optimal optical orthogonal codes with non-constant auto-correlation function*, to appear in Advances in Mathematics of Communications.
- [103] M. Buratti, D. Jungnickel, *Partitioned difference families and harmonious linear spaces* Finite Fields Appl. **92** (2023), Article number 102274.
- [102] M. Buratti, D. Jungnickel, *Partitioned difference families: The storm has not yet passed*, Adv. Math. Commun. **17** (2023), 928–934.
- [101] M. Buratti, A. Nakic, *Super-regular Steiner 2-designs*, Finite Fields Appl. **85** (2023), Article number 102116.
- [100] M. Buratti, F. Merola, *On anti-Novak cycle systems*, Examples and Counterexamples **2** (2022), 100063.
- [99] M. Buratti, D.R. Stinson, *On Resolvable Golomb Rulers, Symmetric Configurations and Progressive Dinner Parties*, Journal of Algebraic Combinatorics **55** (2022), 141–156.
- [98] J. Bao, M. Buratti, L. Ji, *A note on almost partitioned difference families*, Bull. Inst. Combin. Appl. **93** (2021), 45–51.
- [97] S. Bonvicini, M. Buratti, M. Garonzi, G. Rinaldi, T. Traetta, *The first families of highly symmetric Kirkman Triple Systems whose orders fill a congruence class*, Des. Codes Cryptogr. **89** (2021), 2725–2757.
- [96] F. Salassa, G. Dragotto, T. Traetta, Marco Buratti, F. Della Croce, *Merging Combinatorial Design and Optimization: the Oberwolfach Problem*, Australas. J. Combin. **79** (2021), 141–166.
- [95] M. Buratti, A. Nakic, A. Wassermann, *Graph decompositions over projective geometries*, J. Combin. Des. **29** (2021), 149–174.
- [94] M. Buratti and D.R. Stinson, *New Results on Modular Golomb Rulers, Optical Orthogonal Codes and Related Structures*, Ars. Math. Contemp. **20** (2021), 1–27.

- [93] M. Buratti, A. Pasotti, T. Traetta, *A reduction of the spectrum problem for odd sun systems and the prime case*, J. Combin. Des. **29** (2021), 5–37.
- [92] M. Buratti, D. Jungnickel, *Partitioned difference families versus Zero difference balanced functions*, Des. Codes Cryptogr. **87** (2019), 2461–2467.
- [91] M. Buratti, *Hadamard partitioned difference families and their descendants*, Cryptography and Communications **11** (2019), 557–562.
- [90] M. Buratti, A. Nakic, *Designs over finite fields by difference methods*, Finite Fields Appl. **57** (2019), 128–138.
- [89] M. Buratti, F. Merola, *Fano Kaleidoscopes and their generalizations*, Des. Codes Cryptogr. **87** (2019), 769–784.
- [88] M. Buratti, *On disjoint  $(v, k, k - 1)$  difference families*, Des. Codes Cryptogr. **87** (2019), 745–755.
- [87] M. Buratti, *On silver and golden optical orthogonal codes*, Art Discrete Appl. Math. **1** (2018), #P2.02
- [86] M. Buratti, A. Wassermann, *On decomposability of cyclic triple systems*, Australas. J. Combin. **71** (2018), 184–195.
- [85] S. Bonvicini, M. Buratti, *Octahedral, dicyclic and special linear solutions of some Hamilton-Waterloo problems*, Ars Math. Contemp. **14** (2018), 1–14.
- [84] M. Buratti, H. Cao, D. Dai and T. Traetta, *A complete solution to the existence of  $(k, \lambda)$ -cycle frames of type  $g^u$* , J. Combin. Des. **25** (2017), 197–230.
- [83] M. Buratti, G. Rinaldi, T. Traetta, *3-pyramidal Steiner triple systems*, Ars Math. Contemp. **13** (2017), 95–106.
- [82] M. Buratti, S. Costa, X. Wang, *New  $i$ -perfect cycle decompositions via vertex colorings of graphs*, J. Combin. Des. **24** (2016), 495–513.
- [81] M. Buratti, P. Danziger, *A cyclic solution for an infinite class of Hamilton-Waterloo problems*, Graphs Combin. **32** (2016), 521–531.
- [80] M. Buratti, G.J. Lovegrove and T. Traetta, *On the full automorphism group of a Hamiltonian cycle system of odd order*, Graphs Combin. **31** (2015), 1855–1865.
- [79] M. Buratti, T. Traetta, *The structure of 2-pyramidal 2-factorizations*, Graphs Combin. **31** (2015), 523–535.

- [78] R.A. Bailey, M. Buratti, G. Rinaldi and T. Traetta, *On 2-pyramidal Hamiltonian cycle systems*, Bull. Belg. Math. Soc. Simon Stevin **21** (2014), 747–758.
- [77] M. Buratti, F. Merola, *Hamiltonian cycle systems which are both cyclic and symmetric*, J. Combin. Des. **22** (2014), 367–390.
- [76] M. Buratti, G. Rinaldi, T. Traetta, *Some results on 1-rotational Hamiltonian cycle systems*, J. Combin. Des. **22** (2014), 231–251.
- [75] M. Buratti, S. Capparelli, F. Merola, G. Rinaldi, T. Traetta, *A collection of results on Hamiltonian cycle systems with a nice automorphism group*, Electronic Notes in Discrete Mathematics **40** (2013) 245–252.
- [74] E. Brugnoli, M. Buratti, *New designs by changing ... the signs*, Electronic Notes in Discrete Mathematics **40** (2013) 49–52.
- [73] M. Buratti, A. Pasotti, D. Wu, *On optimal  $(v, 5, 2, 1)$  optical orthogonal codes*, Des. Codes Cryptogr. **68** (2013), 349–371.
- [72] M. Buratti, F. Merola, *Dihedral Hamiltonian cycle systems of the cocktail party graph*, J. Combin. Des. **21** (2013), 1–23.
- [71] M. Buratti, T. Traetta, *2-starters, graceful labelings, and a doubling construction for the Oberwolfach Problem*, J. Combin. Des. **20** (2012), 483–503.
- [70] S. Bonvicini, M. Buratti, G. Rinaldi and T. Traetta, *Some progress on 1-rotational Steiner triple systems*, Des. Codes Cryptogr. **62** (2012), 63–78.
- [69] M. Buratti, Y. Wei, D. Wu, P. Fan, M. Cheng, *Relative difference families with variable block sizes and their related OOCs*, IEEE Trans. Inform. Theory, **57** (2011), 7489–7497.
- [68] M. Buratti, K. Momihara, A. Pasotti, *New results on optimal  $(v, 4, 2, 1)$  optical orthogonal codes*, Des. Codes Cryptogr. **58** (2011), 89–109.
- [67] M. Buratti, J. Yan, C. Wang, *From a 1-rotational RBIBD to a partitioned difference family*, Electronic J. Combin. **17** (2010), #R139.
- [66] M. Buratti and D. Ghinelli, *On disjoint  $(3t, 3, 1)$  cyclic difference families*, J. Statist. Plann. Inference **140** (2010), 1918–1922.
- [65] M. Buratti, S. Capparelli, A. Del Fra, *Cyclic Hamiltonian cycle systems of the  $\lambda$ -fold complete and cocktail party graphs*, European J. Combin. **31** (2010), 1484–1496.
- [64] M. Buratti, A. Pasotti, *Further progress on difference families with block size 4 or 5*, Des. Codes Cryptogr. **56** (2010), 1–20.

- [63] M. Buratti, A. Pasotti, *Combinatorial designs and the theorem of Weil on multiplicative character sums*, Finite Fields Appl. **15** (2009), 332–344.
- [62] M. Buratti and G. Rinaldi, *A non-existence result on cyclic cycle-decompositions of the cocktail party graph*, Discrete Math. **309** (2009), 4722–4726.
- [61] K. Momihara, M. Buratti, *Bounds and constructions of optimal  $(n, 4, 2, 1)$  optical orthogonal codes*, IEEE Trans. Inform. Theory **55** (2009), 514–523.
- [60] M. Buratti, A. Bonisoli and G. Rinaldi, *Sharply transitive decompositions of complete graphs into generalized Petersen graphs*, Innov. Incidence Geom. **6/7** (2009), 95–109.
- [59] S.L. Wu, M. Buratti, *A complete solution to the existence problem for 1-rotational  $k$ -cycle systems of  $K_v$* , J. Combin. Des. **17** (2009), 283–293.
- [58] M. Buratti, A. Pasotti, *On perfect  $\Gamma$ -decompositions of the complete graph*, J. Combin. Des. **17** (2009), 197–209.
- [57] M. Buratti, L. Gionfriddo, *Strong difference families over arbitrary groups*, J. Combin. Des. **16** (2008), 443–461.
- [56] M. Buratti, G. Rinaldi, *1-rotational  $k$ -factorizations of the complete graph and new solutions to the Oberwolfach problem*, J. Combin. Des. **16** (2008), 87–100.
- [55] M. Buratti, N.J. Finizio, *Existence results for 1-rotational resolvable Steiner 2-designs with block size 6 or 8*, Bull. Inst. Combin. Appl. **50** (2007), 29–44.
- [54] M. Buratti, N.J. Finizio, M. Greig, B.J. Travers,  *$Z$ -cyclic  $(t, 8)GWhD(v)$ ,  $t = 2, 4$* , Util. Math. **72** (2007), 125–138.
- [53] A. Bonisoli, M. Buratti, G. Mazzuocolo, *Doubly transitive 2-factorizations*, J. Combin. Des. **15** (2007), 120–132.
- [52] M. Buratti and A. Pasotti, *Graph decompositions with the use of difference matrices*, Bull. Inst. Combin. Appl. **47** (2006), 23–32.
- [51] M. Buratti, F. Rania and F. Zuanni, *Some constructions for cyclic perfect cycle systems*, Discrete Math. **299** (2005), 33–48.
- [50] M. Buratti and G. Rinaldi, *On sharply vertex transitive 2-factorizations of the complete graph*, J. Combin. Theory Ser. A **111** (2005), 245–256.
- [49] M. Buratti, *Cycle decompositions with a sharply vertex transitive automorphism group*, Matematiche (Catania) **59** (2004), 91–105.



- [48] M. Buratti and A. Del Fra, *Cyclic Hamiltonian cycle systems of the complete graph*, Discrete Math. **279** (2004), 107–119.
- [47] R.J.R. Abel, M. Buratti, *Some progress on  $(v, 4, 1)$  difference families and optical orthogonal codes*, J. Combin. Theory Ser. A **106** (2004), 59–75.
- [46] M. Buratti, *Existence of 1-rotational  $k$ -cycle systems of the complete graph*, Graphs Combin. **20** (2004), 41–46.
- [45] M. Buratti, A. Del Fra, *Semi-Boolean Steiner quadruple systems and dimensional dual hyperovals*, Adv. Geom. (2003), suppl., S254–S270.
- [44] M. Buratti, *Rotational  $k$ -cycle systems of order  $v < 3k$ ; another proof of the existence of odd cycle systems*, J. Combin. Des. **11** (2003), 433–441.
- [43] M. Buratti, A. Del Fra, *A lower bound on the number of semi-Boolean quadruple systems*, J. Combin. Des. **11** (2003), 229–239.
- [42] M. Buratti, A. Del Fra, *Existence of cyclic  $k$ -cycle systems of the complete graph*, Discrete Math. **261** (2003), 113–125.
- [41] M. Buratti, *Constructions for resolved designs by difference methods*, 6th Workshop on Combinatorics (Messina, 2002). Rend. Sem. Mat. Messina Ser. II 8(24) (2001/02), suppl., 19–28.
- [40] M. Buratti, *Cyclic designs with block size 4 and related optimal optical orthogonal codes*, Des. Codes Cryptogr. **26** (2002), 111–125.
- [39] M. Buratti, M. Gionfriddo, L. Milazzo, V. Voloshin, *Lower and upper chromatic numbers for BSTSs( $2^h - 1$ )*, Computer Sci. J. Moldova **9** (2001), 259–272.
- [38] M. Buratti, F. Zuanni, *Explicit constructions for 1-rotational Kirkman triple systems*, Util. Math. **59** (2001), 27–30.
- [37] M. Buratti, F. Zuanni, *Some observations on three classical BIBD constructions*, Discrete Math. **283** (2001), 19–26.
- [36] M. Buratti, *1-rotational Steiner triple systems over arbitrary groups*, J. Combin. Des. **9** (2001), 215–226.
- [35] R.J.R. Abel, M. Buratti, M. Greig, Y. Miao, *Constructions for rotational near resolvable block designs*, J. Combin. Des. **9** (2001), 157–181.
- [34] M. Buratti, F. Zuanni, *Perfect Cayley Designs as generalizations of Perfect Mendelsohn Designs*, Des. Codes Cryptogr. **23** (2001), 233–247.
- [33] M. Buratti, *Abelian 1-factorizations of the complete graph*, European J. Combin. **22** (2001), 291–295.

- [32] M. Buratti, *Constructions for point-regular linear spaces*, J. Statist. Plann. Inference **94** (2001), 139–146.
- [31] M. Buratti, *Some regular Steiner 2-designs with block-size 4*, Ars Combin. **55** (2000), 133–137.
- [30] M. Buratti, *Two new classes of difference families*, J. Combin. Theory Ser. A **90** (2000), 353–355.
- [29] M. Buratti, *Existence of  $Z$ -cyclic triplewhist tournaments for a prime number of players*, J. Combin. Theory Ser. A **90** (2000), 315–325.
- [28] M. Buratti, F. Zuanni, *The 1-rotational Kirkman triple systems of order 33*, J. Statist. Plann. Inference, **86/2** (2000), 369–377.
- [27] M. Buratti, *Old and new designs via difference multisets and strong difference families*, J. Combin. Des. **7** (1999), 406–425.
- [26] M. Buratti, *Pairwise balanced designs from finite fields*, Discrete Math. **208/209** (1999), 103–117.
- [25] M. Buratti, F. Zuanni, *The 1-rotational  $(52, 4, 1)$ -RBIBD's*, J. Combin. Math. Combin. Comput. **30** (1999), 99–102.
- [24] M. Buratti, F. Zuanni, *On singular 1-rotational Steiner 2-designs*, J. Comb. Theory Ser. A **86** (1999), 232–244.
- [23] M. Buratti, *1-rotational Kirkman triple systems generate dicyclic Steiner 2-designs with block-size 4*, Bull. Inst. Combin. Appl. **26** (1999), 91–95.
- [22] M. Buratti, *Some regular  $(17q, 17, 2)$  and  $(25q, 25, 3)$  BIBD constructions*, Des. Codes Cryptogr. **16** (1999), 117–120.
- [21] M. Buratti, F. Zuanni,  *$G$ -invariantly resolvable Steiner 2-designs which are 1-rotational over  $G$* , Bull. Belg. Math. Soc. **5** (1998), 221–235.
- [20] M. Buratti, *Some constructions for 1-rotational BIBD's with block-size 5*, Australas. J. Combin. **17** (1998), 199–227.
- [19] M. Buratti, *Small quasimultiple of affine and projective planes; some improved bounds*, J. Combin. Des. **6** (1998), 337–345.
- [18] M. Buratti, *Recursive constructions for difference matrices and relative difference families*, J. Combin. Des. **6** (1998), 165–182.
- [17] M. Buratti, *Packing the blocks of a regular structure*, Bull. Inst. Combin. Appl. **21** (1997), 49–58.
- [16] M. Buratti, *Cyclotomic conditions leading to new Steiner 2-designs*, Finite Fields Appl. **3** (1997), 300–313.

- [15] M. Buratti, G. Buroschi and P.V. Ceccherini, *A characterization of hypergraphs which are products of a finite number of edges*, Rend. Mat. Appl. (7), Roma (1997), 373–385.
- [14] L. Berardi, M. Buratti, S. Innamorati, *4-blocked Hadamard 3-designs*, Discrete Math. **174** (1997), 35–46.
- [13] M. Buratti, *Clique-colourings characterizing Hamming graphs*, Bull. Inst. Combin. Appl. **20** (1997), 57–61.
- [12] M. Buratti, *On resolvable difference families*, Des. Codes Cryptogr. **11** (1997), 11–23.
- [11] M. Buratti, *From a  $(G, k, 1)$  to a  $(C_k \oplus G, k, 1)$  difference family*, Des. Codes Cryptogr. **11** (1997), 5–9.
- [10] M. Buratti, *Edge-colourings characterizing a class of Cayley Graphs and a New Characterization of Hypercubes*, Discrete Math. **161** (1996), 291–295.
- [9] M. Buratti, *A packing problem and its application to Bose’s families*, J. Combin. Des. **4** (1996), 457–472.
- [8] M. Buratti, *A powerful method for constructing difference families and optimal optical orthogonal codes*, Des. Codes Cryptogr. **5** (1995), 13–25.
- [7] M. Buratti, *Constructions of  $(q, k, 1)$  difference families with  $q$  a prime power and  $k = 4, 5$* , Discrete Math. **138** (1995), 169–175.
- [6] M. Buratti, *On simple radical difference families*, J. Combin. Des. **3** (1995), 161–168.
- [5] M. Buratti, *Improving two theorems of Bose on difference families*, J. Combin. Des. **3** (1995), 15–24.
- [4] M. Buratti, *Cayley, Marty and Schreier Hypergraphs*, Abh. Math. Sem. Univ. Hamburg **64** (1994), 151–162.
- [3] M. Buratti, *Schubert Graphs, Symmetric Groups and Flags of Boolean Lattices*, J. Geom. **48** (1993), 10–22.
- [2] M. Buratti, *On a property of symmetric designs of order  $n \equiv 2 \pmod{4}$* , J. Geom. **34** (1989), 30–35.
- [1] M. Buratti, *Bruck-Ryser Abstract Theorem and Symmetric Designs*, Geom. Dedicata **27** (1988), 241–250.

## Book chapters

- [B5] M. Buratti, *Tiling rings with “precious” differences*. In: Combinatorics and Finite Fields: Difference Sets, Polynomials, Pseudorandomness and Applications, pages 1–20. Kai-Uwe Schmidt and Arne Winterhof (Editors), Radon Series on Computational and Applied Mathematics **23**. De Gruyter, 2019.
- [B4] M. Buratti, M. Kiermaier, S. Kurz, A. Nakic and A. Wassermann, *q-analogs of group divisible designs*. In: Combinatorics and Finite Fields: Difference Sets, Polynomials, Pseudorandomness and Applications, pages 21–38. Kai-Uwe Schmidt and Arne Winterhof (Editors), Radon Series on Computational and Applied Mathematics **23**. De Gruyter, 2019.
- [B3] M. Buratti, A. Pasotti, *Cyclic kite-designs of order  $v$  that are cyclically embedded into a cyclic  $(v, 4, 2)$ -design*, Quaderni di Matematica **28** (2013).
- [B2] M. Buratti, *Difference families and Frobenius groups*, RIMS Kōkyūroku **1687** (2010), 71–76.
- [B1] R.J.R. Abel, M. Buratti, *Difference families*. In: Handbook of Combinatorial Designs, pages 392–410. Second Edition, C.J. Colbourn and J.H. Dinitz (Editors), Chapman & Hall/CRC, Boca Raton, FL, 2006.

## Citations according to Scopus

1717 citations by 640 documents.  
 $h$ -index 24 (21 excluding self citations).  
Last update: November 14, 2023.

## Speaker at international Conferences/Workshops

### Summary of contributed talks

35 plenary lectures in 13 different countries;  
12 invited talks in 7 different countries;  
42 ordinary talks in 15 different countries.  
For a total of 89 talks in 23 different countries.

### A selection of Plenary Lectures

Stinson66 - New Advances in Designs, Codes and Cryptography.  
*Construct your design explicitly! If you can ....*  
June 13 – 17, 2022. Toronto, Canada.

Combinatorial Designs and Codes satellite conference of 8ECM.  
*Tales from my diary of symmetries.*  
 July 12 – 16, 2021. Rijeka, Croatia.

Colloquium on Combinatorics.  
*A feast of combinatorial designs.*  
 November 8 – 9, 2019. Paderborn University, Germany.

Pseudo-randomness and Finite Fields  
*Tiling rings with precious differences.*  
 October 15 – 18, 2018. Linz, Austria.

9th Slovenian International Conference on Graph Theory.  
*Cyclic designs: some selected topics.*  
 June 23 – 29, 2019. Bled, Slovenia.

Conference on Combinatorics and its Applications  
 (in celebration of Charlie Colbourn’s 65th birthday).  
*Digging for precious differences.*  
 July 14 – 16, 2018. Nanyang Technological University, Singapore.

3rd Istanbul Design Theory, Graph Theory and Combinatorics Workshop.  
*Differences may still make the difference.*  
 June 13 – 17, 2016. Koç University, Istanbul, Turkey.

International Conference on Combinatorics and Graphs Combinatorics  
 (Satellite conference of ICM2014).  
*On graphs with prescribed chromatic sequence.*  
 August 8 – 12, 2014. Beijing Jiaotong University, China.

The 21th Workshop “3in1” 2012.  
*Hamiltonian cycle systems with a nice automorphism group.*  
 November 29 – 30, 2012. Krakow, Poland.

Algebraic Combinatorics and related groups and algebras.  
*Combinatorial designs via factorizations of groups into subsets.*  
 November 17 – 20, 2009. Matsumoto, Japan.

## Detailed list of attended conferences

[<sup>t</sup> = talk (42), <sup>i</sup> = invited talk (12), <sup>p</sup> = plenary talk (35)]

2024 (to be held):

<sup>p</sup> CODESCO '24; *Combinatorial Designs and Codes* (Sevilla, Spain)

<sup>p</sup> *Combinatorial Constructions Conference* (Dubrovnik, Croatia)

2023:

<sup>t</sup> *RICCOTA2023; Rijeka Conference on Combinatorial Objects and their Applications* (Rijeka, Croatia)

- <sup>t</sup> *The 8th Slovenian Conference on Graph Theory* (Kranjska Gora, Slovenia)
- <sup>i</sup> *BIRS, Extremal Graphs arising from Designs and Configurations* (Banff, Canada)
- <sup>i</sup> *Groups, graphs and everything in between* (Bled, Slovenia).

2022:

- <sup>p</sup> *Stinson66 - New Advances in Designs, Codes and Cryptography* (Toronto, Canada).
- <sup>t</sup> *Combinatorial Constructions Workshop* (Zagreb, Croatia).
- <sup>t</sup> *Combinatorics 2022* (Mantova, Italy).
- <sup>p</sup> *5th Catania Combinatorial Conference* (Catania, Italy).

2021:

- <sup>p</sup> *Combinatorial Designs and Codes* (online, Rijeka, Croatia).
- <sup>t</sup> *The 8th European Congress on Mathematics* (online, Portoroz).
- <sup>t</sup> *CMS Summer Meeting* (Ottawa, online).
- <sup>t</sup> *CanADAM 2021* (online).
- <sup>p</sup> *The 10th Shanghai Conference on Combinatorics* (online, Shanghai, China).

2020:

- <sup>p</sup> *Algebraic Combinatorics and Graph Theory* (Rome), cancelled.

2019:

- <sup>p</sup> *Colloquium in Combinatorics* (Paderborn, Germany)
- <sup>p</sup> *9th Slovenian International Conference on Graph Theory* (Bled, Slovenia)
- <sup>t</sup> *CanADAM 2019* (Vancouver).

2018:

- <sup>p</sup> *Pseudorandomness and Finite Fields* (Linz, Osterreich)
- <sup>t</sup> *Workshop on Algebraic Graph Theory and Complex Networks 2018* (Napoli, Italy)
- <sup>p</sup> *Conference on Combinatorics and its Applications*  
(in celebration of Charlie Colbourn's 65th birthday)  
(Nanyang Technological University, Singapore)
- <sup>t</sup> *Combinatorics 2018* (Arco di Trento, Italy).
- <sup>t</sup> *Groups, graphs and more* (Koper, Slovenia)

2017:

- <sup>p</sup> *Trends in Graph Theory and Combinatorics 2017* (Milano, Italy)
- <sup>t</sup> *9th Shanghai Conference on Combinatorics* (Shanghai, China)
- <sup>t</sup> *13th International Conference on Finite Fields and Applications* (Gaeta, Italy)
- <sup>p</sup> *Hypergraphs, Graphs and Designs - HyGraDe 2017* (Sant'Alessio Siculo, Italy)

- <sup>i</sup> *Alex Rosa 80* (Mikulov, Czech Republic)
- <sup>i</sup> *7th PhD Summer School in Discrete Mathematics* (Rogla, Slovenia)
- <sup>i</sup> *5th Irsee Conference on Finite Geometries* (Irsee, Germany)
- 2016:
  - <sup>p</sup> *The National Conference on Combinatorial Designs* (Hangzhou, China)
  - <sup>p</sup> *3rd Istanbul Design Theory, Graph Theory and Combinatorics Conference 2016* (Istanbul, Turkey)
  - <sup>t</sup> *Combinatorics 2016* (Maratea, Italy)
- 2015:
  - <sup>t</sup> *XX Congresso dell'Unione Matematica Italiana* (Siena, Italy).
  - <sup>p</sup> *Giornate di Geometria 2015* (Caserta, Italy).
  - <sup>t</sup> *The 8th Slovenian Conference on Graph Theory* (Kranjska Gora, Slovenia).
  - <sup>t</sup> *ALCOMA 2015* (Kloster Banz, Germany).
- 2014:
  - <sup>p</sup> *International Conference on Combinatorics and Graphs* (Beijing, China).
  - <sup>t</sup> *SIAM Conference on Discrete Mathematics (DM14)* (Minnesota, USA).
  - <sup>t</sup> *Combinatorics 2014* (Gaeta, Italy).
- 2013:
  - <sup>t</sup> *CanADAM 2013* (Memorial University of Newfoundland, Canada).
- 2012:
  - <sup>p</sup> *The 21th Workshop "3in1" 2012* (Krakow, Poland).
  - <sup>p</sup> *Combinatorics 2012* (Perugia, Italy).
  - <sup>p</sup> *The 4th Chinese workshop on Combinatorial designs and Coding theory* (Hangzhou, China).
  - <sup>t</sup> *WilsonFest, a conference in honor of Rick Wilson* (Pasadena, California).
  - <sup>p</sup> *Conference in honour of Dieter Jungnickel's 60th birthday* (Magdeburg, Germany).
- 2011:
  - <sup>t</sup> *2nd Istanbul Design Theory, Graph Theory and Combinatorics Conference* (Istanbul, Turkey).
  - <sup>i</sup> *3rd Irsee Conference on Finite Geometries* (Irsee, Germany).
  - <sup>p</sup> *7th Shanghai Conference on Combinatorics* (Shanghai, China).

2010:

<sup>t</sup> *Combinatorics 2010* (Verbania, Italy).

<sup>i</sup> *Fourth Pythagorean Conference (An Advanced Research Workshop in Geometry, Combinatorial Designs and Cryptology)* (Corfu, Greece).

2009:

<sup>p</sup> *Algebraic Combinatorics and related groups and algebras* (RIMS, Matsumoto, Japan).

2008:

<sup>p</sup> *Combinatorics 2008* (Costermano, Italy).

2007:

<sup>t</sup> *Design Theory of Alex Rosa* (Bratislava, Slovakia).

<sup>p</sup> *International Workshop on Combinatorics 2007* (Tokyo and Kyoto, Japan).

2006:

<sup>t</sup> *Combinatorics 2006* (Ischia, Italy).

2005:

<sup>t</sup> *ALCOMA 2005* (Thurnau, Germany).

2004:

<sup>p</sup> *Combinatorics 2004* (Catania, Italy).

<sup>i</sup> *International Conference on Incidence Geometry* (La Roche en Ardenne, Belgium).

<sup>t</sup> *35th Southeastern international conference on combinatorics, graph theory and computing* (Florida Atlantic University, USA).

<sup>p</sup> *International Workshop on Combinatorics* (Keyo University, Tokio, Japan).

2003:

<sup>p</sup> *International Symposium on Graphs, Designs and Applications* (Messina, Italy).

<sup>i</sup> *DIMACS 2003, Graph Theory and its Applications* (Centre for Discrete Mathematics and Theoretical Computer Sciences, Piscataway, New Jersey, USA).

<sup>t</sup> *19th British Combinatorial Conference* (Bangor, England).

<sup>t</sup> *7th International Conference on Finite Fields and Applications* (Toulouse, France).

2002:

<sup>t</sup> *Combinatorics 2002* (Maratea, Italy).

<sup>p</sup> *6th Workshop on Combinatorics* (Messina, Italy).



2001:

<sup>p</sup> *The Second Lethbridge Workshop on Designs, Codes, Cryptography and Graph Theory* (Lethbridge, Canada).

<sup>t</sup> *6th International Conference on Finite Fields and Applications* (Oaxaca, Mexico).

2000:

<sup>t</sup> *25th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing* (Christchurch, New Zealand).

<sup>p</sup> *Workshop on Designs, Codes, Graphs and their Links* (RIMS, Kyoto, Japan).

<sup>p</sup> *Combinatorics 2000* (Gaeta, Italy).

1999:

<sup>t</sup> *5th International Conference on Finite Fields and Applications* (Augsburg, Germany).

<sup>t</sup> *17th British Combinatorial Conference* (Canterbury, England).

<sup>p</sup> *3rd Shanghai Conference on Designs, Codes and Finite Geometries* (Shanghai, China).

<sup>t</sup> *30th Southeastern international conference on combinatorics, graph theory and computing* (Florida Atlantic University, USA).

1998:

<sup>t</sup> *Combinatorics 1998* (Mondello, Italy)

1997:

<sup>i</sup> *Second Conference on Linear Spaces* (Giessen, Germany).

<sup>i</sup> *Finite Geometries and Combinatorics* (Deinze, Belgium).

1996:

<sup>p</sup> *2nd Shanghai Conference on Designs, Codes and Finite Geometries* (Shanghai, China).

<sup>i</sup> *Groups and Geometries* (Siena, Italy).

<sup>t</sup> *Combinatorics 1996* (Assisi, Italy).

1995:

<sup>p</sup> *R.C. Bose Memorial Conference on Statistical Design and Related Combinatorics*, (Colorado State University, USA).

<sup>t</sup> *The Seventh International Conference on Geometry* (Nasholim, Israel).

1994:

<sup>t</sup> *25th Southeastern international conference on combinatorics, graph theory and computing* (Florida Atlantic University, USA).

<sup>t</sup> *Combinatorics 1994* (Pescara, Italy).

1993:

<sup>t</sup> *14th British Combinatorial Conference* (Keele, England).

<sup>t</sup> *International Conference on Combinatorics* (Keszthely, Hungary).

1992:

<sup>t</sup> *Combinatorics 1992* (Acireale, Italy).