CURRICULUM VITAE

Francisco Santos

December 2017

Basic data

Name: Francisco Santos
Born in Valladolid (Spain) on 28 May, 1968. **Nationality:** spanish

Personal address: Calle El Campizo 37
E-39012 Santander, Spain.

Professional address: Departamento de Matemáticas, Estadística y Computación.
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Academic degrees:
Licenciado en Matemáticas, Univ. de Cantabria, Spain, June 1991.
Maîtrise en Mathématiques Pures, Univ. de Grenoble I, France, June 1991.
Licenciado en Física, Univ. de Cantabria, Spain, September 1996.
Ph. D. in Mathematics, Univ. de Cantabria, Spain, June 1995.

Current position: *Catedrático de Geometría y Topología* ("Full professor in Geometry and Topology") in the Department of Mathematics, Statistics and Computer Science, Universidad de Cantabria, since July 2008.

Research interests Discrete and Computational Geometry, Real Algebraic Geometry, Geometric and Topological Combinatorics

Academic career

Previous positions

- 1992 – 1995, Ph. D. student, Becario F.P.U. (Spanish government doctoral fellowship) Univ. de Cantabria, Santander, Spain.
- 1996: Postdoctoral fellow, Mathematical Institute, University of Oxford, Oxford, U.K.
- 1997–2008: Profesor Titular de Universidad (associate professor), Universidad de Cantabria.
- Since 2008: Catedrático de Universidad (full professor), Universidad de Cantabria.

Visiting positions

- 2001: Visiting Associate Professor, Dept. of Mathematics, University of California at Davis.
- 2003: Research Professor, Mathematical Sciences Research Institute, Berkeley CA, EE.UU. (www.msri.org).
- 2007–2008: Visiting Professor, Dept. of Mathematics, University of California at Davis.
- 2008: Invité - Maître de Conférences Hors Classe, Dept. of Computer Science, École Normale Supérieure de Paris.
- 2013: Humboldt Research Fellow, Dept. of Mathematics, Freie Universität Berlin.
- 2016–2019: Einstein Visiting Fellow, Dept. of Mathematics Freie Universität Berlin.
- 2017: Clay Senior Scholar, Mathematical Sciences Research Institute, Berkeley.

Distinctions and awards

- **"Premio joven"** de Ciencia y Tecnología 2003, ("Young researcher" award) of the Fundación General de la Universidad Complutense de Madrid.
  `http://www.ucm.es/fundacion/premio-joven`
- **Invited speaker** in the "Combinatorics" section of the *International Congress of Mathematicians, ICM 2006* (Madrid).

- **Humboldt Research Fellowship** awarded by the Alexander von Humboldt Foundation (Germany), 2012.
- **Fulkerson Prize 2015** of the AMS and the MOS to the best research paper in Discrete Mathematics in 2012–2014.
- **Research Prize "Juan María Parés"**, of the Universidad de Cantabria, 2016.

Ph. D. students (advisor)

Daciana Bochiş, (Universidad de Cantabria, Mathematics, May 1999)

Miguel Azaola (Universidad de Cantabria, Mathematics, June 2001).

David Orden (Universidad de Cantabria, Mathematics, June 2003).

Pilar Sabariego (Universidad de Cantabria, Mathematics, June 2008).

Mónica Blanco (Universidad de Cantabria, Mathematics, June 2017).

Vincent Pilaud (Universidad de Cantabria, Mathematics and Université de Paris VII, Computer Science, May 2010, coadvised with Michel Pocchiola).

Giulia Codenotti (Freie Universität Berlin, Mathematics, expected September 2019).

Jorge Olarte (Freie Universität Berlin, Mathematics, expected September 2019).

Óscar Iglesias (Universidad de Cantabria, Mathematics, expected November 2019.

Francisco Criado (Technische Universität Berlin, Mathematics, expected September 2020, coadvised with Michael Joswig).

Invited plenary lectures (selection, last seven years)

London Math. Society speaker (three lectures at U. College London, U. of Oxford, U. of Cambridge, 15–17 March 2011),

Annual meeting of the German Math Society (DMV) (Cologne, 19–22 September 2011),

Seminaire Lotharingien de Combinatoire (series of three invited lectures, Ellwangen, Alemania, 25–27 de Marzo de 2013),

ACM Symposium on Computational Geometry (Rio de Janeiro, Brasil, 16–21 June 2013),

25th International Conference on Formal Power Series and Algebraic Combinatorics, FPSAC 2013, (Paris, 24–28 June 2013),

SIAM Conference on Optimization, (San Diego, 19–24 May 2014),

First Italian-Spanish Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI (Bilbao, Spain, 30 June–4 July 2014),

European Conference on Combinatorics, Graph Theory and Applications (EUROCOMB) (Bergen, Norway, Aug. 31–Sep. 4, 2015).

Journées nationales 2016, GDR Informatique Mathématique Villetaneuse (Paris, France), Jan. 18–20, 2016), .

Grants received

1992–95 FPU predoctoral grant from the Spanish *Dirección General de Profesorado*

1996 "Human and Capital Mobility" postdoctoral fellowship of the European Union (contract n. ERBCHBGCT940647)

1998–2001, 2002–2004, 2006-2008, 2009–2011, 2012–2015, 2015–2017, 2018–2019: PI in research projects of the spanish ministry's *Plan Nacional de Investigación* (National Research Plan).

2012–2013: Humboldt Research Award of the Alexander von Humboldt Foundation (Berlin).

2016–2019: Einstein Visiting Professor Grant of the Einstein Foundation (Berlin).

Conferences, workshops and advanced courses organized:

"10th European Workshop on Computational Geometry, ECG'94" Santander, Marzo 1994. Organizing committee member.

Summer course "Triangulations of polyhedra and point sets", Univ. of Cantabria, Julio 2000. Director and lecturer.

Summer course "Triangulations of polyhedra and point sets", MSRI, Berkeley, Julio 2003. Organizer and lecturer.

"Algebraic and Geometric Combinatorics" in Anogia (Crete, Greece), 20–25 August, 2005. Scientific and organizing committee member.

"Geometric and Topological combinatorics – A satellite conference of ICM 2006", Alcalá de Henares, Spain, 30 August - 5 September, 2006. Scientific comittee (coordinator) and organizing committee.

International Fall Workshop on Geometry and Physics (Castro Urdiales, September 3-6 2008). Organizing committee member.

Real Geometry, Computer Algebra and Math Education, in honor of Tomás Recio (Castro Urdiales, May 17-21 2010). Scientific committee member and organizing committee chair.

Jornadas de Matemática Discreta y Algorítmica. Scientific committee chair and organizing committee member in teh 2010 edition (Castro Urdiales, July 7-9 2010). Scientific committee member in 2012, 2014, 2016.

Triangulations (MFO Oberwolfach, April 29-May 4, 2012). Scientific committee member.

Congreso Annual de la RSME (Santiago de Compostela, January 21–25, 2013). Scientific committee member.

Geometric and Algebraic Combinatorics (MFO Oberwolfach, February 2–6, 2015). Scientific committee member.

Einstein Workshop on Lattice Polytopes (Berlin, November 2016), coordinator of the organizing and scientific committee.

Special semester on "Geometric and Topological Combinatorics" (MSRI, August-December 2017). Lead organizer.

Geometric and Topological CombinatoricsConnections for Women: (MSRI, Berkeley, 31 Aug–1 Sep, 2017). Member of the organizer committee.

Einstein Workshop on Discrete Geometry and Topology (Berlin, March 2018). Coordinator of the organizing and scientific committee.

Congreso Annual de la RSME (Santander, February 4–8, 2019). Coordinator of the scientific committee.

Geometric, Topological, and Algebraic Combinatorics (MFO Oberwolfach, August 26–30, 2019). Scientific committee member.

Other activities / service

- Erasmus/ECTS coordinator for Mathematics at Universidad de Cantabria, from 1995 to March 2003.
- Director of the *Centro Internacional de Enceuentros Matemáticos* of the University of Cantabria (www.ciem.unican.es) from May 2008 to September 2010.
- Vicedean of the Faculty of Sciences – Coordinator of the *Degree in Mathematics* of Universidad de Cantabria from April 2009 to 2013.
- Member of the Scientific Committee of the Royal Spanish Mathematical Society (RSME) 2010–2016.
- Member of the **editorial boards** of the journals *Discrete and Computational Geometry* since 2007 and *Electronic J. of Combinatorics* since 2014.
- Coordinator of the Doctoral program in "Mathematics and Computer Science" at the University of Cantabria (2011–2017) and of the program in "Science and Technology", 2014–2017.
- Member of the Scientific Committee of the *Spanish Topology Network*, 2013–2016. Coordinator in 2014 and treasurer in 2015 and 2016.
- Member in the **Ph. D. defense committees** of Carmen Cortés (Universidad de Sevilla, 1999), Maria Jesús Pisabarro (Universidad de Valladolid, 2001), Rafael Santamaría (Universidad de Cantabria, 2002), Julian Pfeifle (Technische Universität Berlin, 2003), Aimée Calatayud (Universidad Politécnica de Madrid, 2004), Narcís Coll (Universitat Politécnica de Catalunya, 2004), Miguel A. Marco Buzunáriz (Universidad de Zaragoza, 2007), Edward D. Kim (Universidad de California Davis, 2010), Cesar Ceballos (Freie Univ. Berlin, 2012), Nicolai Häehnle (EPFL Lausana, Noviembre 2012), Arnau Padrol (UPC Barcelona, Marzo 2013), Pascal Benchimol (Ecole Polytechnique Paris, December 2014), Aaron Dall (UPC Barcelona, February 2015), Tobias Friedl (Freie Univ. Berlin, May 2017), Katy Beeler (Freie Univ. Berlin, Oct. 2017, reviewer), Thibault Manneville (École Polytechnique, July 2017), Jan Hoffman (Freie Universität Berlin, February 2018).
- Served as referee for some 25 international journals plus several international conferences.

Publications

Preprints or submitted papers:

[1] Mónica Blanco, Francisco Santos. Non-spanning lattice 3-polytopes. Preprint, 20 pages, November 2017. arXiv:1711.07603

[2] Vincent Pilaud, Francisco Santos. Quotientopes. Preprint, 8 pages, November 2017. arXiv:1711.05353

[3] Jorge Olarte, Francisco Santos, Jonathan Spreer, Christian Stump. Pure flag simplicial complexes and the Erd?s-Ko-Rado property- Preprint, 23 pages, October 2017. arXiv:1710.02518

[4] Óscar Iglesias Valiño, Francisco Santos. Classification of empty lattice 4-simplices of width larger than two. Preprint, 19 pages, April 2017. arXiv:1704.07299

[5] Mónica Blanco, Christian Haase, Jan Hofmann, Francisco Santos. The Finiteness Threshold Width of Lattice Polytopes Preprint, 15 pages, July 2016. arXiv:1607.00798

[6] Christian Haase, Andreas Paffenholz, Lindsay C. Piechnik, Francisco Santos Existence of unimodular triangulations - positive results Preprint, 82 pages, May 2014, updated Dec 2017. arXiv:1405.1687

Refereed research papers:

(In reverse chronological order)

[7] Mónica Blanco and Francisco Santos. Enumeration of lattice 3-polytopes by their number of lattice points *Discrete Comput. Geom.*, to appear. DOI: 10.1007/s00454-017-9932-5.

[8] Carl Lee and Francisco Santos. Subdivisions and triangulations of polytopes. In *Handbook of Discrete and Computational Geometry*, Third Edition, edited by Jacob E. Goodman, Joseph O'Rourke, and Csaba D. Tóth, CRC Press, November 2017, pp 415–447.

[9] Francisco Criado and Francisco Santos. The maximum diameter of pure simplicial complexes and pseudo-manifolds *Discrete Comput. Geom.*, 58(3) (October 2017), 643–649.

[10] Jean-Philippe Labbé, Thibault Manneville, Francisco Santos. Hirsch polytopes with exponentially long combinatorial segments *Math. Program.*, Ser. A, 165:2 (2017), 663–688.

[11] Francisco Santos, Christian Stump, Volkmar Welker Noncrossing sets and a Grassmann associahedron *Forum of Mathematics, Sigma*, 5 (2017), e5

[12] Mónica Blanco and Francisco Santos. Lattice 3-polytopes with six lattice points *SIAM J. Discrete Math* **30(2)** (2016) , 687–717

[13] Mónica Blanco and Francisco Santos. Lattice 3-polytopes with few lattice points *SIAM J. Discrete Math* **30(2)** (2016) , 669–686

[14] Eran Nevo, Francisco Santos, Stedman Wilson Many triangulated odd-spheres *Math. Annalen* 364:3 (2016), 737–762. DOI: 10.1007/s00208-015-1232-x

[15] Cesar Ceballos, Francisco Santos, Günter M. Ziegler, Many non-equivalent realizations of the associahedron *Combinatorica*, 35(5) (2015), 513–551. DOI: 10.1007/s00493-014-2959-9

[16] Tristram Bogart, Christian Haase, Milena Hering, Benjamin Lorenz, Benjamin Nill, Andreas Paffenholz, Francisco Santos, Hal Schenck, Few smooth d-polytopes with N lattice points *Israel J. Math.*, Volume 207, Issue 1, 2015, 301–329

[17] Benjamin Matschke, Francisco Santos, Christophe Weibel, The width of 5-dimensional prismatoids *Proc. London Math. Soc.*, Vol 110 (3) (2015), 647–672. DOI: 10.1112/plms/pdu064

[18] Pablo Garrido, David Gómez, Francisco Santos and Ramń Agüero, On the Feasibility of Inter-flow Network Coding Over Random Wireless Mesh Networks. In "Mobile Networks and Management – 6th International Conference, MONAMI 2014, Würzburg, Germany, September 22-26, 2014", Agüero, R., Zinner, Th., Goleva, R., Timm-Giel, A., Tran-Gia, P. (Eds.), Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, Vol. 141, Springer Verlag (2015), pp. 259–274. DOI: 10.1007/978-3-319-16292-8

[19] Károly Bóróczky, Francisco Santos, Oriol Serra, On sumsets and convex hull. *Discrete Comput. Geom.* 52 (4), (2014), 705–729. DOI: 10.1007/s00454-014-9633-2

[20] Francisco Santos, Gnter M. Ziegler, Unimodular triangulations of dilated 3-polytopes Trans. Moscow Math. Soc., 74 (2013), 293-311. DOI: 10.1090/S0077-1554-2014-00220-X

[21] Francisco Santos, Recent progress on the combinatorial diameter of polytopes and simplicial complexes TOP, 21:3 (October 2013), 426-460. DOI: 10.1007/s11750-013-0295-7

[22] Francisco Santos, Some acyclic systems of permutations are not realizable by triangulations of a product of simplices In "Algebraic and Combinatorial Aspects of Tropical Geometry", Edited by Erwan Brugall, Mara Anglica Cueto, Alicia Dickenstein, Eva-Maria Feichtner, and Ilia Itenberg, Contemporary Mathematics 589, Amer. Math. Soc., Providence RI, 2013, pp 317-328. ISBN-13: 978-0-8218-9146-9.

[23] Oswin Aichholzer, Thomas Hackl, Michael Hoffmann, Clemens Huemer, Attila Pr, Francisco Santos, Bettina Speckmann, Birgit Vogtenhuber Maximizing Maximal Angles for Plane Straight-Line Graphs, *Computational Geometry: Theory and Applications*, 46:1 (January 2013), 17-28. DOI: 10.1016/j.comgeo.2012.03.002

[24] Julian Pfeifle, Vincent Pilaud, Francisco Santos, Polytopality and Cartesian products of graphs *Israel J. Math* 192 (1) (2012), 121-144. DOI: 10.1007/s11856-012-0049-5

[25] Francisco Santos, A counter-example to the Hirsch conjecture *Annals of Math. (2)*, 176 (July 2012), 383-412. DOI: 10.4007/annals.2012.176.1.7

[26] Vincent Pilaud, Francisco Santos, The brick polytope of a sorting network, *European J. Combin.*, 33:4 (2012), 632-662.

[27] Francisco Santos, Tamon Stephen, Hugh Thomas, Embedding a pair of graphs in a surface, and the width of 4-dimensional prismatoids *Discrete Comput. Geom.*, 47:3 (2012), 569-576. DOI: 10.1007/s00454-011-9361-9

[28] P. Sabariego and F. Santos, On the number of facets of three-dimensional Dirichlet stereohedra IV: Quarter cubic groups. *Contributions to Algebra and Geometry* 52:2 (2011), 237-263.

[29] C. Cortés, C. I. Grima, F. Hurtado, A. Márquez, F. Santos, J. Valenzuela, Transforming triangulations on non planar surfaces. *SIAM J. Discrete Math.* 24:3 (2010), 821-840.

[30] E. D. Kim, F. Santos, An update on the Hirsch conjecture, *Jahresbericht der Deutschen Mathematiker-Vereinigung*, Volume 112(2) (June 2010), 73–98.

[31] J. A. de Loera, E. D. Kim, S. Onn, and F. Santos, Graphs of transportation polytopes *J. of Combin. Th. Ser. A*, **116**(8), 2009, 1306–1325.

[32] P. Sabariego, F. Santos, Triple-loop networks with arbitrarily many minimum distance diagrams, *Discrete Math.* **309**(6), 2009, 1672–1684

[33] V. Pilaud, F. Santos, Multi-triangulations as complexes of star polygons, *Discrete Comput. Geom. 41(2), 2009, 284–317*

[34] Christian Haase, Benjamin Nill, Andreas Paffenholz, and Francisco Santos Lattice points in Minkowski sums *Electronic J. Combin. 15 (2008), no. 1, Note 11, 5 pp*

[35] P. Sabariego and F. Santos, On the number of facets of three-dimensional Dirichlet stereohedra III: Full cubic groups, *Discrete Comput. Geom. 40(2) (2008), 159–189*

[36] G. Rote, F. Santos, and I. Streinu, Pseudo-triangulations - a survey, in: J.E. Goodman, J. Pach, R. Pollack (Eds.), *Proceedings of the Joint Summer Research Conference on Discrete and Computational Geometry, Snowbird, UT, June 18-22, 2006*, **Contemp. Math.**, American Mathematical Society, Providence, RI, in press.
`http://arxiv.org/abs/math.CO/0612672`, 63 pp.

[37] O. Aichholzer, D. Orden, F. Santos, and B. Speckmann, On the Number of Pseudo-Triangulations of Certain Point Sets, *J. Combin. Theory Ser. A (2008) 254–278.*

[38] O. Aichholzer, T. Hackl, M. Hoffmann, C. Huemer, F: Santos, B. Speckmann, B. Vogtenhuber, Maximizing Maximal Angles for Plane Straight Line Graphs, In, Algorithms and Data Structures 10th International Workshop, WADS 2007, Halifax, Canada, August 15-17, 2007, Frank Dehne, Jrg-Rdiger Sack, Norbert Zeh (Eds.), Lecture Notes in Computer Science 4619, Springer-Verlag, 2007, pp. 458-469.

[39] D. Orden, F. Santos, B. Servatius, H. Servatius, Combinatorial Pseudo-Triangulations, *Discrete Mathematics*, **307** (2007), 554–566.

[40] F. Santos, A. Schürmann, F. Vallentin, Lattice Delone simplices with exponential volume. *European J. Combin.* **28**:3 (2007), 801-806.

[41] F. Santos, Geometric bistellar flips. The setting, the context and a construction. In *Proceedings of the International Congress of Mathematicians, Madrid, August 22-30, 2006* (Marta Sanz-Sol, Javier Soria, Juan Luis Varona, Joan Verdera, eds.), European Mathematical Society, 2006, Vol III, pp. 931-962. ISBN 978-3-03719-022-7

[42] D. Bochis and F. Santos, On the number of facets of three-dimensional Dirichlet stereohedra II: Non-cubic groups. *Beiträge Algebra Geom.*, **47**:1 (2006), 89–120.

[43] F. Santos, Non-connected toric Hilbert schemes *Mathematische Annalen.* 332:3 (2005), 645–665.

[44] L. Bowen, J. A. de Loera, M. Develin, F. Santos, The Gromov norm of the product of two surfaces, *Topology* 44:2 (2005), 321-339

[45] F. Santos, The Cayley Trick and triangulations of products of simplices. In *Integer Points in Polyhedra — Geometry, Number Theory, Algebra, Optimization*, edited by A. Barvinok, M. Beck, C. Haase, B. Reznick, and V. Welker, *Contemporary Mathematics* **374**, American Mathematical Society, 2005, pp. 151-177.

[46] M. Develin, F. Santos, B. Sturmfels On the rank of a tropical matrix In *Combinatorial and Computational Geometry* (J. E. Goodman, J. Pach and E. Welzl, eds), MSRI Publications **52**, Cambridge University Press, 2005, pp. 211-240. ISBN-10: 0521848628

[47] R. Haas, D. Orden, G. Rote, F. Santos, B. Servatius, H. Servatius, D. Souvaine, I. Streinu and W. Whiteley Planar Minimally Rigid Graphs and Pseudo-Triangulations *Computational Geometry, Theory and Applications*, **31**:1-2 (May 2005), 31–61.

[48] D. Orden and F. Santos, *The polytope of non-crossing graphs on a planar point set Discrete Comput. Geom.*, 33:2 (2005), 275-305.

[49] D. Orden, G. Rote, F. Santos, B. Servatius, H. Servatius, W. Whiteley, "Non-crossing frameworks with non-crossing reciprocals". *Discrete Comput. Geom.*, 32:4 (2004), 567-600.

[50] D. Orden, F. Santos, "Asymptotically efficient triangulations of the d-cube", *Discrete Comput. Geom.*, **30**:4 (2003), 509–528.

[51] G. Rote, F. Santos and I. Streinu, "Expansive motions and the Polytope of Pointed Pseudo-Triangulations", in *Discrete and Computational Geometry – The Goodman-Pollack Festschrift* (B. Aronov, S. Basu, J. Pach, M. Sharir, eds), Algorithms and Combinatorics 25, Springer Verlag, Berlin, June 2003, pp. 699–736.

[52] F. Santos and B. Sturmfels, "Higher Lawrence configurations", *J. Combin. Theory, Ser. A.*, **103**:1 (2003), 151-164.

[53] F. Santos and R. Seidel, "A better upper bound on the number of triangulations of a planar point set", *J. Combin. Theory Ser. A*, **102**:1 (2003), 186-193.

[54] F. Santos and B. Sturmfels, "Alexander duality in subdivisions of Lawrence polytopes", *Adv. Geom.*, **3**:2 (2003), 177-189.

[55] F. Santos, "Triangulations of oriented matroids", *Mem. Amer. Math. Soc.*, **156** (2002), no. 741, 81 pages.

[56] C. A. Athanasiadis and F. Santos, "On the topology of the Baues poset of polyhedral subdivisions", *Topology*, **41**:3 (2002), 423–433.

[57] M. Azaola and F. Santos, "The number of triangulations of the cyclic polytope C(n,n-4)", *Discrete Comput. Geom.* **27**:1 (2002), 29–48.

[58] C. A. Athanasiadis and F. Santos, "Monotone paths on zonotopes", *Canadian J. Math.*, **53**:6 (2001), 1121–1140.

[59] F. Santos, "On the refinements of a polyhedral subdivision", *Collect. Math.* **52**:3 (2001), 231–256.

[60] J.A. de Loera, F. Takeuchi and F. Santos, "Extremal properties for dissections of convex polytopes", *SIAM J. Disc. Math.*, **14**:2 (2001), 143–161.

[61] F. Santos, "Realizable but not strongly Euclidean oriented matroids", in "Oriented matroids 99" (R. Cordovil and M. Las Vergnas, eds.), *European J. Combin.*, **22**:5 (2001), 767–776.

[62] D. Bochis and F. Santos, "On the number of facets of three dimensional Dirichlet stereohedra I: groups with reflexions", *Discrete Comput. Geom.*, **25** (2001) 3, 419–444.

[63] F. Santos, "A point set whose space of triangulations is disconnected", *J. Amer. Math. Soc.* **13** (2000), 611–637.

[64] B. Huber, J. Rambau and F. Santos, "The Cayley trick, lifting subdivisions and the Bohne-Dress Theorem on zonotopal tilings", *J. Eur. Math. Soc. (JEMS)*, **2** (2000), 179–198.

[65] M. Azaola and F. Santos, "The graph of triangulations of a point configuration with $d+4$ vertices is 3-connected", *Discrete Comput. Geom.* **23** (2000) 4, 489–536.

[66] C.A. Athanasiadis, J.A. de Loera, V. Reiner and F. Santos, "Fiber polytopes for the projections between cyclic polytopes", *European J. Combin.* **21** (2000) 1, 19–47.

[67] J. Rambau and F. Santos, "The generalized Baues problem for cyclic polytopes I", *European J. Combin.* **21** (2000) 1, 65–83.

[68] F. Santos, "Triangulations with very few geometric bistellar neighbors", *Discrete Comput. Geom.* **23** (2000) 1, 15–33.

[69] J.A. de Loera, F. Santos and J. Urrutia, "The number of geometric bistellar neighbors of a triangulation", *Discrete Comput. Geom.* **21** (1999) 1, 131–142.

[70] C.A. Athanasiadis, J. Rambau and F. Santos, "The generalized Baues problem for cyclic polytopes II" Proceedings of Geometric Combinatorics'98 (Kotor) *Publ. Inst. Math. (Beograd) (N.S.)* **66(80)** (1999) 3–15.

[71] F. Santos, "Construction of real algebraic plane nodal curves with given topology and optimal degree, I", *Rev. Mat. Univ. Complut. Madrid*, **10**, número suplementario (1997), 291–310.

[72] J.A. de Loera, S. Hoşten, F. Santos, B. Sturmfels, "On the polytope of all triangulations of a point configuration", *Doc. Math. J. DMV.*, **1** (1996), 103–119.

[73] J.A. de Loera and F. Santos, "An effective version of Polya's theorem on positive definite forms", *Journal of Pure and Applied Algebra*, **108** (1996), 231–240. A correction of errors has appeared in *J. Pure Appl. Algebra*, **155** (2001) 309–310.

[74] F. Santos, "On Delaunay oriented matroids for convex distance functions", *Discrete Comput. Geom.*, **16** (1996) 197–210.

[75] F. Santos, "Inscribing a symmetric body in an ellipse", *Inform. Process. Lett.*, **59** (1996) 175–178.

[76] M.J. González-López, T. Recio and F. Santos, "Parametrization of Semialgebraic Sets", *Math. Comput. Simulat.*, **42** (1996), 353–362.

Books

[77] C. Athanasiadis, V. Batyrev, D. Dais, M. Henk, y F. Santos (eds.) Algebraic and Geometric Combinatorics, *Contemporary Mathematics* **423**, Amer. Math. Soc., 2007. ISBN-13: 978-0-8218-4080-1.

[78] J. A. de Loera, J. Rambau y F. Santos Triangulations: Structures for Algorithms and Applications, 539 pp. Algorithms and Computation in Mathematics, Springer-Verlag, 2010. ISBN: 978-3-642-12970-4

Other publications

Conference proceedings with referee process

[79] F. Santos, "Construction of singular algebraic plane nodal curves with given topology", in *(Trento meeting on) Real Analytic and Algebraic Geometry, II*, de Gruyter Publishers, Berlin (1994), pp. 213–228.

[80] A.G. Corbalán, M. Mazón, T. Recio, F. Santos, " On the topological shape of planar Voronoi diagrams", in *Proceedings of the 9th Annual Symposium on Computational Geometry*, Association for Computing Machinery Inc., New York, 1993, 109–115.

[81] F. Santos, "On Delaunay Oriented Matroids", in *Proceedings of the 6th Canadian Conference on Computational Geometry*, Mark Keil (ed.), University of Saskatchewan, Saskatoon, 1994, 375–380.

[82] C. Icking, R. Klein, N.-M. Lê, L. Ma and F. Santos, "On Bisectors for Convex Distance Functions in 3-Space", Proceedings 11th Canad. Conf. Comput. Geom., University of British Columbia, Vancouver, Canada, 1999.
URL http://www.cccg.ca/proceedings/1999/fp28.ps.gz.

[83] D. Randall, G. Rote, F. Santos and J. Snoeyink, "Counting triangulations and pseudo-triangulations of wheels". Proceedings 13th Canad. Conf. Comput. Geom., University of Waterloo, Waterloo, Canada, 2001, pp. 149-152.
URL: http://www.cccg.ca/proceedings/2001/snoeyink-77218.ps.gz.

[84] D. Orden and F. Santos. "Asymptotically efficient triangulations of the d-cube". Proceedings of the 14th Canad. Conf. on Comput. Geom. (CCCG'02), University of Lethbridge, Lethbridge, Canada, 2002, pages 167-169.
URL: http://www.cccg.ca/proceedings/2002/02.ps

[85] O. Aichholzer, D. Orden, F. Santos and B. Speckmann, *On the number of pseudo-triangulations of certain point sets*, proceedings 15th Canad. Conf. Comput. Geom., Dalhousie University, Halifax, Canada, 11–13 de Agosto de 2003.

[86] R. Haas, D. Orden, G. Rote, F. Santos, B. Servatius, H. Servatius, D. Souvaine, I. Streinu and W. Whiteley, *Planar Minimally Rigid Graphs and Pseudo-Triangulations*, proceedings of the 19th ACM Symposium on Computational Geometry, San Diego, June 8-10, 2003

Non-refereed and/or expository publications

[87] T. Recio and F. Santos, *Johannes Kepler, empaquetamientos de esferas y el concepto matemático de demostración*, en: Fotografiando las matemáticas. Ed. Carroggio. Barcelona. 2000.

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This paper was translated into German by Julian Pfeifle, and has appeared in *Mitteilungen der DMV*, Vol. 18-4 (Winter 2010), 214–220.