

Maria Bras-Amorós Curriculum Vitae

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1. Education background

Ph.D. in Applied Mathematics. 2003
Technical University of Catalonia (UPC, *Universitat Politècnica de Catalunya*),
San Diego State University (SDSU).

Degree in Mathematics. UPC. 1998

2. Merits in research and teaching

Research

Merit of Research Certificate (CNEAI) 2003-2008
2009-2014

Merit of Research Certificate (AQU Catalunya) 2001-2006
2007-2012

Merit of Research Quality (Universitat Rovira i Virgili), that “identifies the staff with a research activity with a quality impact that is significantly higher than the international mean in the specific area”. 2012

Teaching

Merit of Teaching Certificates (CNEAI) 2005
2010
2015

Merit of Teaching Certificates (AQU Catalunya) 1998-2004
2005-2009
2010-2014

Academic Activity Award (Universitat Rovira i Virgili) 2010-2011
2011-2012
2012-2013
2013-2014

3. Positions and ranks held

Tenured Associate Professor 2010-present
School of Engineering, URV, *Universitat Rovira i Virgili*.

<i>Tenured Assistant Professor</i> School of Engineering, URV.	2008-2010
<i>Tenure-Track Lecturer</i> School of Engineering, URV.	2007-2008
<i>Tenure-Track Lecturer</i> School of Engineering UAB, <i>Universitat Autònoma de Barcelona</i> .	2004-2007
<i>Assistant professor</i> School of Engineering, UAB.	2003-2004
<i>Assistant professor</i> School of Computer Sciences, UPC.	2003
<i>Assistant professor</i> School of Engineers, UPC.	1998-1999

4. Publications

4.1 Books as author

1. M. Bras-Amorós, J. Rifà-Coma: *Finite arithmetic and coding theory*. Universitat Oberta de Catalunya, 2015.
2. M. Bras-Amorós, J. Rifà-Coma: *Matemàtica Discreta II. Aritmètica i Teoria de la Codificació*. Eina-E n. 10, Publicacions de la URV, 2012. ISBN: 978-84-8424-207-9.

4.2 Books as editor

1. M. Bras-Amorós, T Høholdt (Eds), *Applied Algebra, Algebraic Algorithms and Error-Correcting Codes* (proceedings) *Lecture Notes in Computer Science*, Springer, vol. 5527, June 2009. ISSN: 0302-9743.

4.3 Invited book chapters

1. M. Bras-Amorós, *Numerical Semigroups and Codes*, *Algebraic Geometry Modeling in Information Theory*, World Scientific, E. Martínez-Moro (ed.) 2013. ISBN: 978-981-4335-75-1
2. M. E. O'Sullivan, M. Bras-Amorós, *The Key Equation for One-Point Codes*, Chapter 3 of *Advances in Algebraic Geometry Codes*, World Scientific, E. Martínez-Moro, C. Munuera, D. Ruano (eds.), vol. 5, pp. 99-152, 2008. ISBN 978-981-279-400-0

4.4 ISI JCR Journal Articles

1. M. Bras-Amorós, M. Pujol, *Side Lengths of Equiangular Polygons (as seen by a coding theorist)*, American Mathematical Monthly, vol. 122, n. 5, pp. 476-478 Mathematical Association of America, May 2015. ISSN: 0002-9890.
2. M. Bras-Amorós, K. Lee, A. Vico-Oton, *New lower bounds on the generalized Hamming weights of AG codes*, IEEE Transactions on Information Theory, vol. 60, n. 10, pp. 5930-5937 October 2014. ISSN: 0018-9448.
3. K. Lee, M. Bras-Amorós, M. E. O'Sullivan, *Unique Decoding of General AG Codes*, IEEE Transactions on Information Theory, vol. 60, n. 4, pp. 2038-2053, April 2014. ISSN: 0018-9448.
4. K. Stokes, M. Bras-Amorós, *Linear, non-homogeneous, symmetric patterns and prime power generators in numerical semigroups associated to combinatorial configurations*, Semigroup Forum, Springer, vol. 88, n. 1, pp. 11-20, February 2014. ISSN: 0037-1912.
5. M. Bras-Amorós, A. Vico-Oton, *On the Geil-Matsumoto Bound and the Length of AG codes*, Designs, Codes and Cryptography, Springer, vol. 70, n. 1–2, pp. 117–125, January 2014. ISSN: 0925-1022.
6. M. Bras-Amorós, P. A. García-Sánchez, A. Vico-Oton, *Nonhomogeneous patterns on numerical semigroups*, International Journal of Algebra and Computation, World Scientific, vol. 23, n. 6, pp. 1469–1483, September 2013. ISSN: 0218-1967.
7. M. Bras-Amorós, *The Ordinarization Transform of a Numerical Semigroup and Semigroups with a Large Number of Intervals*, Journal of Pure and Applied Algebra, Elsevier, vol. 216, n. 11, pp. 2507-2518, November 2012. ISSN:0022-4049.
8. K. Lee, M. Bras-Amorós, M. E. O'Sullivan, *Unique Decoding of Plane AG Codes via Interpolation*, IEEE Transactions on Information Theory, vol. 58, n. 6, pp. 3941-3950, June 2012. ISSN: 0018-9448.
9. M. Bras-Amorós, K. Stokes, *The Semigroup of Combinatorial Configurations*, Semigroup Forum, Springer, vol. 84, n. 1, pp. 91-96, January 2012. ISSN: 0037-1912.
10. M. Bras-Amorós, J. Domingo-Ferrer, A. Vico-Oton, *Co-citations and Relevance of Authors and Author Groups*, International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, World Scientific., vol. 19, pp. 127-139 September 2011. ISSN: 0218-4885.
11. K. Stokes, M. Bras-Amorós, *Associating a Numerical Semigroup to the Triangle-Free Configurations*, Advances in Mathematics of Communications, American Institute of Mathematical Sciences, vol. 5, n. 2, pp. 351-371, May 2011. ISSN: 1930-5346.
12. M. Bras-Amorós, J. Domingo-Ferrer, V. Torra, *A Bibliometric Index Based on the Collaboration Distance Between Cited and Citing Authors*, Journal of Informetrics, Elsevier, vol. 5, n. 2, pp. 248-264, April 2011. ISSN: 1751-1577.

13. K. Stokes, M. Bras-Amorós, *Optimal Configurations for Peer-to-Peer User-Private Information Retrieval*, *Computers and Mathematics with Applications*, Elsevier, vol. 59, n. 4, pp. 1568-1577, February 2010. ISSN: 0898-1221.
14. M. Bras-Amorós, S. Bulygin, *Towards a Better Understanding of the Semigroup Tree*, *Semigroup Forum*, Springer, vol. 79, n. 3, pp. 561-574, December 2009. ISSN: 0037-1912.
15. J. Domingo-Ferrer, M. Bras-Amorós, Q. Wu, J. Manjón, *User-Private Information Retrieval Based on a Peer-to-Peer Community*, *Data and Knowledge Engineering*, Elsevier, vol. 68, n. 11, pp. 1237-1252, November 2009. ISSN:0169-023X.
16. M. Bras-Amorós, *On Numerical Semigroups and the Redundancy of Improved Codes Correcting Generic Errors*, *Designs, Codes and Cryptography*, Springer, vol. 53, n. 2, pp. 111-118, November 2009. ISSN: 0925-1022.
17. M. Bras-Amorós, *Bounds on the Number of Numerical Semigroups of a Given Genus*, *Journal of Pure and Applied Algebra*, Elsevier, vol. 213, n. 6, pp. 997-1001, June 2009. ISSN:0022-4049.
18. M. Bras-Amorós, M. E. O'Sullivan, *Redundancies of Correction-Capability-Optimized Reed-Muller Codes*, *Discrete Applied Mathematics*, Elsevier, vol. 156, n. 15, pp. 3005-3010, August 2008. ISSN: 0166-218X
19. M. Bras-Amorós, *Fibonacci-Like Behavior of the Number of Numerical Semigroups of a Given Genus*, *Semigroup Forum*, Springer, vol. 76, n. 2, pp. 379-384, March 2008. ISSN: 0037-1912.

Source for the entry A007323 of the On-Line Encyclopedia of Integer Sequences by Neil J.A. Sloane.

20. M. Bras-Amorós, M. E. O'Sullivan, *Duality for Some Families of Correction Capability Optimized Evaluation Codes*, *Advances in Mathematics of Communications*, American Institute of Mathematical Sciences, vol. 2, n. 1, pp. 15-33, February 2008. ISSN: 1930-5346
21. M. Bras-Amorós, A. de Mier, *Representation of Numerical Semigroups by Dyck Paths*, *Semigroup Forum*, Springer, vol. 75, n. 3, pp. 676-681, December 2007. ISSN: 0037-1912
22. M. Bras-Amorós, M. E. O'Sullivan, *The Order Bound on the Minimum Distance of the One-Point Codes Associated to the Garcia-Stichtenoth Tower of Function Fields*, *IEEE Transactions on Information Theory*, vol. 53, n. 11, pp. 4241-4245, November 2007. ISSN: 0018-9448
23. M. Bras-Amorós, M. E. O'Sullivan, *On Semigroups Generated by Two Consecutive Integers and Improved Hermitian Codes*, *IEEE Transactions on Information Theory*, vol. 53, n. 7, pp. 2560-2566, July 2007. ISSN: 0018-9448
24. M. Bras-Amorós, *Algebraic-Geometry Codes, One-Point Codes and Evaluation Codes*, *Designs, Codes and Cryptography*, Springer, vol. 43, n. 2-3, pp. 137-145, June

2007. ISSN: 0925-1022

25. M. Bras-Amorós, *A Note on Numerical Semigroups*, IEEE Transactions on Information Theory, vol. 53 n. 2, pp. 821-823, February 2007. ISSN: 0018-9448
26. M. Bras-Amorós, M. E. O'Sullivan, *The Correction Capability of the Berlekamp-Massey-Sakata Algorithm with Majority Voting*, Applicable Algebra in Engineering, Communication and Computing, Springer, vol. 17 n. 5, pp. 315-335, October 2006. ISSN: 0938-1279
27. M. Bras-Amorós, P. A. García-Sánchez, *Patterns on Numerical Semigroups*, Linear Algebra and its Applications, Elsevier, vol. 414, pp. 652-669, April 2006. ISSN: 0024-3795
28. M. Bras-Amorós, P. Guitart, J. González, J. Serra, F. García, *BISK Scheme Applied to Sign Encoding and Magnitude Refinement*, Lecture Notes in Artificial Intelligence, Advanced Concepts for Intelligent Vision Systems, Springer, vol. 3708, pp. 442-451, September 2005. ISSN: 0302-9743, ISBN: 3-540-29032-X.
29. M. Bras-Amorós, *Acute Semigroups, the Order Bound on the Minimum Distance and the Feng-Rao Improvements*, IEEE Transactions on Information Theory, vol. 50 n. 6, pp. 1282-1289, June 2004. ISSN: 0018-9448
30. M. Bras-Amorós, *Improvements to Evaluation Codes and New Characterizations of Arf Semigroups*, Lecture Notes in Computer Science, Applied Algebra, Algebraic Algorithms and Error-Correcting Codes, M. Fossorier, T. Høholdt, A. Poli (eds.), Springer, vol. 2643, pp. 204-215, May 2003. ISSN: 0302-9743.

4.5 Lecture Notes in Computer Science - Electronic Notes in Discrete Mathematics

1. M. Bras-Amorós, *Ordinarization Transform of a Numerical Semigroup*, Electronic Notes in Discrete Mathematics, vol. 38, pp. 187-193, European Conference on Combinatorics, Graph Theory and Applications (EuroComb 2011), org. Rényi Institute, Budapest, Hungary, Elsevier, August-September 2011. ISSN: 1571-0653.
2. M. Bras-Amorós, J. Domingo-Ferrer, V. Torra, *A Bibliometric Index Based On Collaboration Distances*, Lecture Notes in Artificial Intelligence, Modeling Decisions for Artificial Intelligence, V. Torra, Y. Narukawa (eds.), Springer, vol. 6408, pp. 5-6. October 2010. ISSN: 0302-9743.
3. M. Bras-Amorós, M. E. O'Sullivan, *From the Euclidean Algorithm for Solving a Key Equation for Dual Reed-Solomon Codes to the Berlekamp-Massey Algorithm*, Lecture Notes in Computer Science, Applied Algebra, Algebraic Algorithms and Error-Correcting Codes, M. Bras-Amorós, T. Høholdt (eds.), Springer, vol. 5527, pp. 32-42, June 2009. ISSN: 0302-9743.
4. J. Domingo-Ferrer, M. Bras-Amorós, *A Shared Steganographic File System With Error Correction*, Lecture Notes in Artificial Intelligence, Modeling Decisions for Arti-

ficial Intelligence, V. Torra, Y. Narukawa (eds.), Springer, vol. 5285, pp. 227-238. October 2008. ISSN: 0302-9743.

5. J. Domingo-Ferrer, M. Bras-Amorós, *Peer-to-Peer Private Information Retrieval*, Lecture Notes in Computer Science, Privacy in Statistical Databases, J. Domingo-Ferrer, Yucel Saygin (eds.), Springer, vol. 5262, pp. 315-323. September 2008. ISSN: 0302-9743.
6. M. Bras-Amorós, M. E. O'Sullivan, *Extended Norm-Trace Codes with Optimized Correction Capability*, Lecture Notes in Computer Science, Applied Algebra, Algebraic Algorithms and Error-Correcting Codes, P. V. Kumar, T. Høholdt, H. Janwa (eds.), Springer, vol. 4851, pp. 337-346, December 2007. ISSN: 0302-9743.

4.6 ISI proceedings

1. M. Bras-Amorós, J. González, P. Guitart, J. Serra, F. García, *Still Image Compression Through Exhaustive Two-Valued Shape-Adaptive Searches*, IEEE Proceedings of the Data Compression Conference, p. 441, March 2006. ISSN: 1068-0314, ISBN-13: 978-0-7695-2545-8, ISBN-10: 0-7695-2545-8.
2. J. Serra, J. González, P. Guitart, M. Bras-Amorós, *Evaluation of 1D, 2D, and 3D SPIHT Coding Technique for Remote Sensing*, Image and Signal Processing for Remote Sensing X, L. Bruzzone (ed.), Society of Photo-optical Instrumentation Engineers (SPIE), vol. 5573, pp. 273-283, November 2004. ISSN: 0277-786X, ISBN: 0-8194-5520-2.

4.7 Other journal articles (non-ISI JCR)

1. K. Stokes, M. Bras-Amorós, *A survey on the use of combinatorial configurations for anonymous database search*, Advanced Research in Data Privacy, Studies in Computational Intelligence, Springer, vol. 567, pp. 407-419, 2015. ISSN: 1860-949X.
2. M. Bras-Amorós, T. Giménez, *Acompanyament de les fases d'elaboració de la seqüència numèrica amb cançons*, In-fàn-ci-a, Associació de Mestres Rosa Sensat, vol. 202, pp. 20-27, 2015. ISSN: 0212-4599.
3. K. Stokes, M. Bras-Amorós, *Patterns in semigroups associated with combinatorial configurations*, Contemporary Mathematics 629, American Mathematical Society, pp. 323-334, 2014. ISSN 1098-3627 (online); ISSN 0271-4132 (print).
4. M. Bras-Amorós, *Matemàtiques en Juego. Exposición temporal en el Museo del Juguete de Cataluña, Figueres.*, SUMA. Revista sobre la enseñanza y el aprendizaje de las matemáticas, n. 77, pp. 139-140, November 2014. ISSN: 1130-488X.
5. M. Bras-Amorós, *Les taules de multiplicar a través d'imatges*, Nou Biaix, FEEMCAT-SCM, vol. 34, pp. 41-48 June 2014. ISSN: 2014-2021.

6. M. Bras-Amorós, J. Domingo-Ferrer, *On Overlappings of Digitized Lines and Shared Steganographic File Systems*, Transactions on Data Privacy, vol. 1, n. 3, pp. 131-139, December 2008. ISSN: 1888-5063.
7. M. Bras-Amorós, J. González, P. Guitart, J. Serra, F. García, *Sign and Magnitude Refinement Encoding for Lossy-to-Lossless Image Compression*, WSEAS Transactions on Signal Processing, vol. 2, n. 1, pp. 229-236, November 2005. ISSN: 1790-5022.

4.8 Other proceedings (non-ISI)

1. M. Bras-Amorós, K. Lee, A. Vico-Oton, *Semigroup Ideals, Intervals of Gaps, and Generalized Hamming Weights of AG Codes*, Proceedings of the Academy Contact Forum "Galois Geometries and Applications", organized by The Royal Flemish Academy of Belgium for Science and the Arts, 2014.
2. (abstract) M. Bras-Amorós, A. Vico-Oton, *On the Maximal Gap of an Ideal and the Feng-Rao Numbers*, Iberian Meeting on Numerical Semigroups, University of Trás-os-Montes e Alto Douro, Vila Real, July 2012.
3. (abstract) M. Bras-Amorós, A. Vico-Oton, *Non-homogeneous Patterns on Numerical Semigroups*, Iberian Meeting on Numerical Semigroups, University of Trás-os-Montes e Alto Douro, Vila Real, July 2012.
4. M. Bras-Amorós, A. Vico-Oton, *On the Geil-Matsumoto Bound*, Workshop on Computational Security, Centre de Recerca Matemàtica, pp. 51-54, November 2011.
5. K. Stokes, M. Bras-Amorós, *Combinatorial structures for an anonymous database search protocol*, Workshop on Computational Security, Centre de Recerca Matemàtica, pp. 19-30, November 2011.
6. M. Bras-Amorós, A. Vico-Oton, *On the Geil-Matsumoto Bound*, Third International Castle Meeting on Coding Theory and Applications, J. Borges and M. Villanueva (eds.), Servei de Publicacions Universitat Autònoma de Barcelona, pp. 75-80, September 2011. ISBN: 978-84-490-2688-1
7. K. Stokes, M. Bras-Amorós, *On Query Self-Submission in Peer-to-Peer User-Private Information Retrieval*, Proceedings of the 4th International Workshop on Privacy and Anonymity in the Information Society, PAIS 2011, Uppsala, Sweden, March 2011. ISBN: 978-1-4503-0611-9
8. M. Bras-Amorós, A. Vico-Oton, *On the Size of the Colluder Set in Fingerprinting Attacks*, XI Reunión Española sobre Criptología y Seguridad de la Información, RECSI 2010, Universitat Rovira i Virgili, Tarragona, September 2010. ISBN: 978-84-693-3304-4.
9. M. Bras-Amorós, K. Stokes, M. Greferath, *Problems Related to Combinatorial Configurations with Applications to P2P-User Private Information Retrieval*, 19th International Symposium on Mathematical Theory of Networks and Systems, MTNS

2010, pp. 1267-1271, Budapest, Hungarian Academy of Sciences, Hungary, July 2010. ISBN: 978-963-311-370-7.

10. M. Bras-Amorós, K. Stokes, *On the Existence of Combinatorial Configurations*, Proceedings of the 3rd International Workshop on Optimal Network Topologies, IWONT 2010, Iniciativa Digital Politècnica, UPC, pp. 145-167, June 2010. ISBN: 978-84-7653-565-3.
11. (abstract) M. Bras-Amorós, J. Castellà-Roca, *The Semigroup of Combinatorial Configurations*, International Conference on Semigroups and Related Topics, Universidade do Porto, Porto, Portugal, July 2009.
12. (abstract) M. Bras-Amorós, *From the Euclidean Algorithm for Solving a Key Equation for Dual Reed-Solomon Codes to the Berlekamp-Massey Algorithm*, The Claude Shannon Workshop on Coding and Cryptography, Claude Shannon Institute, Cork, Ireland, May 18 2009.
13. M. Bras-Amorós, J. Domingo-Ferrer, K. Stokes, *Configuraciones Combinatóricas y Recuperación Privada de Información por Pares*, Nuevos Avances en Criptografía y Codificación de la Información, Real Sociedad Matemática Española, pp. 19-28, February 2009. ISBN: 978-84-8409-277-3.
14. M. Bras-Amorós, J. Domingo-Ferrer, *On Overlappings of Digital Straight Lines*, Actas de las VI Jornadas de Matemática Discreta y Algorítmica, J. M. Miret (ed.), pp. 187-194, July 2008. ISBN: 978-84-8409-263-6.
15. M. Bras-Amorós, *Bounding the Number of Numerical Semigroups of a Given Genus by Means of Generating Trees*, Actas de las VI Jornadas de Matemática Discreta y Algorítmica, J. M. Miret (ed.), pp. 179-185, July 2008. ISBN: 978-84-8409-263-6.
16. (abstract) M. Bras-Amorós, *Optimized Evaluation Codes Guaranteeing Correction of Generic Errors*, 4th Workshop on Coding and Systems, Universitat d'Alacant, Universitat Miguel Hernández d'Elx, March 13 2008.
17. M. Bras-Amorós, J. González, P. Guitart, J. Serra, F. García, *On Sign Encoding and Magnitude Refinement of Still Images*, WSEAS International Conference on Remote Sensing, vol. 1, B. Huang, H. J. Bloom, J. J. Puschell (eds.), pp. 23-28, November 2005. ISBN: 960-8457-37-8.
18. M. Bras-Amorós, *Addition Behavior of a Numerical Semigroup*, Publications de la Société Mathématique de France, Arithmetic, Geometry and Coding Theory, vol. 11 series 2005, Y. Aubry, G. Lachaud, M. Tsfasman (eds.), pp. 21-28, 2005. ISSN: 1285-2783, ISBN: 2-85629-175-9.
19. M. Bras-Amorós, *Patterns on Numerical Semigroups*, Actas de los Encuentros de Álgebra Computacional y Aplicaciones, 9th edition, L. González-Vega and T. Recio (eds.), Universidad de Cantabria, Santander, Spain, pp. 53-58, July 2004. ISBN: 84-688-6988-04.
20. M. Bras-Amorós, *Analysis of one-point Goppa codes from the Weierstrass semigroup*

perspective, Tagungsbericht 53/2003 Kodierungstheorie, Mathematisches Forschungsinstitut Oberwolfach, p. 12, December 2003.

21. M. Bras-Amorós, J.M. Brunat, R. Ferré, E. Fossas, F. Martínez, X. Muñoz, C. Padró, F. Puerta, J. Quer, J. Saludes, J. Villar and S. Xambó, *Codis Espacials i Temporals*, GEMT BCN 2001, UPC, pp. 35-44, July 2001. ISSN: 84-699-6876-9.
22. S. Xambó-Descamps, M. Bras-Amorós, *Omega Decoders for Goppa Codes*, Actas del Sexto Encuentro de Álgebra Computacional y Aplicaciones, 6th edition, A. Montes (ed.), Servei de Publicacions, UPC, Barcelona, pp. 129-142, September 2000. ISBN: 84-699-3037-0.

5. Plenary and invited courses and talks

5.1 Plenary talks

1. J. Domingo-Ferrer, M. Bras-Amorós,
Configurations, Set Intersection and Peer-to-Peer Privacy.
25th International Workshop on Combinatorial Algorithms (IWCOA 2014), Duluth, Minnesota, University of Minnesota Duluth, University of Wisconsin - Superior, October 15, 2014.
2. M. Bras-Amorós,
From coding theory to several different communication scenarios. Applied linear algebra over finite fields.
Annual Meeting of the GAMM Activity Group on Applied and Numerical Linear Algebra, Barcelona, July 15, 2014.
3. M. Bras-Amorós,
From the Euclidean Algorithm for Solving a Key Equation for Dual Reed-Solomon Codes to the Berlekamp-Massey Algorithm.
Workshop on Coding and Cryptography, Claude Shannon Institute, Cork, Ireland, May 18, 2009.

5.2 Plenary courses

1. M. Bras-Amorós,
Numerical Semigroups and Codes.
CIMPA School, Ubatuba, Sao Paulo, July 2017.
2. M. Bras-Amorós,
Semigroups, Codes and Privacy Applications.
S3CM: Algebraic Geometry Modeling and Information Theory, Universidad de Valladolid en Soria, July 12-16, 2010.

5.3 Invited round tables

1. Round table about “Algebra applied to Communications” (leads Ignacio Luengo, UCM): Gilles Barthe (IMDEA Software), Maria Bras-Amorós (URV), Diego Hernández Gallardo (Fábrica Nacional de Moneda y Timbre), Aplicaciones Industriales del Álgebra Computacional (AICA 2013), Depto. de Álgebra de la UCM. November 8, 2013.

5.4 Invited conference talks

1. M. Bras-Amorós,
Peer-to-peer private information retrieval and combinatorial configurations,
Interdisciplinary Workshop on Data Privacy, Maynooth, September 28, 2015.
2. M. Bras-Amorós,
Semigroup ideals and generalized Hamming weights,
Congreso de la Real Sociedad Matemática Española, Granada, Spain, February 2, 2015.
3. M. Bras-Amorós,
Ordinarization Transform of a Numerical Semigroup,
International Meeting on Numerical Semigroups, Cortona, Italy, September 9, 2014
4. M. Bras-Amorós,
New lower bounds on the generalized Hamming weights of AG codes,
Academy Contact Forum “Galois Geometries and Applications”, organized by The Royal Flemish Academy of Belgium for Science and the Arts, Brussels, Belgium, October 5, 2012.
5. M. Bras-Amorós,
Recuento de Semigrupos por el Género,
II Encuentro Conjunto de la Sociedad Matemática Mexicana y la Real Sociedad Matemática Española, Torremolinos, Spain, January 17-20, 2012.
6. M. Bras-Amorós,
Sistema Anónimo de Búsquedas por Pares frente a Servidores,
VI International Conference on Non Associative Algebra and its Applications, Zaragoza, Spain, November 1-5, 2011.
7. M. Bras-Amorós,
Counting Numerical Semigroups by Genus,
Jornada Joves Investigadors de la Societat Catalana de Matemàtiques, Barcelona. October 14, 2011.
8. M. Bras-Amorós, K. Stokes, M. Greferath,
Using $(0, 1)$ -Geometries for Collusion-Free P2P-User Private Information Retrieval,
19th International Symposium on Mathematical Theory of Networks and Systems (MTNS 2010), Budapest, Hungary, July 6, 2010.

9. M. Bras-Amorós,
On Numerical Semigroups and Algebraic Codes.
XVIII Latin American Algebra Colloquium, São Pedro, Brazil, August 6, 2009. Universidade de São Paulo. Instituto Nacional de Ciência e Tecnologia de Matemática (INCTMat).
10. M. Bras-Amorós, J. Domingo-Ferrer, K. Stokes,
Configuraciones Combinatóricas y Recuperación Privada de Información por Pares,
Real Sociedad Matemática Española, Oviedo, Spain, February 6, 2009.
11. M. Bras-Amorós,
Results on Numerical Semigroups with Applications to Algebraic Geometry Codes,
Iberian Meeting on Numerical Semigroups, Universidade do Porto, Porto, Portugal, March 17, 2008.
12. M. Bras-Amorós,
On Numerical Semigroups and Their Applications to Algebraic Geometry Codes.
II Thematic Seminar Algebraic Geometry, Coding and Computing, Universidad de Valladolid, Segovia, Spain, October 10, 2007.
13. M. Bras-Amorós,
Analysis of the Parameters of Algebraic Codes from the Weierstrass Semigroup Perspective.
Workshop on Kodierungstheorie, Mathematisches Forschungsinstitut Oberwolfach, Germany, December 14, 2003.

5.5 Invited talks in permanent colloquia

1. *Numerical Semigroups and Algebraic Codes.*
Arbeitsgemeinschaft in Codierungstheorie und Kryptographie, Universität Zürich, Switzerland, April 14, 2010.
2. *Weierstrass Semigroups and Algebraic Geometry Codes.*
Seminari de Geometria Algebraica UB-UPC, Universitat de Barcelona, June 13, 2008.
3. *Codes and Privacy.*
Encuentro Interconsolider Consolider "ARES" y Consolider "i-MATH", Interactions towards secure communication, Centro Internacional de Encuentros Matemáticos, Castro Urdiales, May 15, 2008.
4. *Correction Capability Optimized Evaluation Codes.*
Seminario de Geometría Algebraica y Singularidades (GAS), Universidad de Valladolid, October 11, 2007.
5. *Numerical Semigroups and Their Applications.*
Seminari de Combinatòria, Teoria de Grafes i Aplicacions, Universitat Politècnica de Catalunya, February 1, 2007.
6. *On the Redundancy and Generating Matrices of Evaluation Codes* (joint work with Michael E. O'Sullivan).
Mathematics and Statistics Colloquia, SDSU, USA, August 23, 2006.

7. *Improving Evaluation Codes*.
Combinatorics and Digital Communications Colloquium, UAB, April 21, 2004.
8. *Teoría de Códigos y Teoría de Semigrupos*.
Seminario del Departamento de Álgebra, Universidad de Granada, Spain, November 10, 2003.
9. *On Improvements to Evaluation Codes*.
EIDMA Seminar Coding, Crypto and Information Theory, Euler Institute for Discrete Mathematics and Its Applications, Technische Universiteit Eindhoven, Holland, March 14, 2003.
10. *Optimizing Parameters for Evaluation Codes* (joint work with Michael E. O'Sullivan).
Mathematics and Statistics Colloquia, SDSU, USA, December 16, 2002.

6. Funded research projects

6.1 Projects as principal investigator

1. *Non-cryptographic secure and private data management in Multiclouds (Sec-MCloud)*
2. *In cloud we trust? improving trust in the cloud via security, privacy, reliability, and integrity (ICWT)*. Ministerio de Economía y Competitividad, Government of Spain. TIN2012-32757, 103.615,20 euros.
3. *Peer-to-peer User-Private Information Retrieval (RIPUP). Recuperación de Información con Privacidad de Usuario por Pares (RIPUP)*. Ministerio de Ciencia e Innovación, Government of Spain, TIN2009-11689, 10-1-2009 to 09-30-2012, 83.853,00 euros.
4. *Peer-to-peer User-Private Information Retrieval (RIPUP)*. AIRE Grant for Incorporation to Research, Universitat Rovira i Virgili, 2009 AIRE-08, 7-1-2009 to 12-31-2011, 6.000,00 euros.
5. *Applied Algebra, Algebraic Algorithms, and Error Correcting Codes*. Ayudas Complementarias, Ministerio de Ciencia e Innovación, Government of Spain, MTM2009-06811-E/MTM, 2009, 1-1-2009 to 6-15-2009, 6.000,00 euros.
6. *Applied Algebra, Algebraic Algorithms, and Error Correcting Codes*. ARCS grant for conference organization, Government of Catalonia, 2008ARCS100168, 2008, 6.000,00 euros.
7. *Applied Algebra, Algebraic Algorithms, and Error Correcting Codes*. OCO grant for conference organization, Universitat Rovira i Virgili, 2009 OCO-43 2009, 1.940,72 euros.

6.2 International projects

1. National Science Foundation Directorate for Computer and Information Science and Engineering,
Decoding of Algebraic Geometry Codes: Theoretical Analysis, Efficient Algorithms, Practical Implementation, National Science Foundation, USA, CCF-0916492. 7-2009 to 6-2012, Principal investigator: M. E. O'Sullivan. \$ 223.974,00. Other partners K. Lee (Chosun University, Korea), M. Bras-Amorós, E. Popovici (University College Cork, Ireland).

6.3 Projects with other principal investigators

1. *Consolidated Catalan research group*. Government of Catalonia, 2014 SGR 537, 1-1-2014 to 12-31-2016, Principal investigator: Josep Domingo-Ferrer. 50.000,00 euros.
2. *Thematic network on mathematics of the information society*. Ministerio de Ciencia e Innovación, Government of Spain, MTM2011-13856-E, Principal investigator: Jorge Villar, 6.000,00 euros.
3. *CRISES. Comerç electrònic segur*. Programa de Foment de l'Activitat de la Recerca, Universitat Rovira i Virgili, 2010PFR-URV-B2-11, 1-1-2010 to 12-31-2016, Principal investigator: Josep Domingo-Ferrer. 94.227,00 euros.
4. *Consolidated Catalan research group*. Government of Catalonia, 2009SGR-1135, 10-1-2009 to 10-30-2013, Principal investigator: Josep Domingo-Ferrer. 46.800,00 euros.
5. *Thematic network on mathematics of the information society*. Ministerio de Educación y Ciencia, Government of Spain, MTM2008-03268-E, 1-10-2008 to 30-9-2009, Principal investigator: Josep M. Miret Biosca, 8.000,00 euros.
6. *Advanced Research on Information Security and Privacy (ARES)*. Ministerio de Educación y Ciencia, Government of Spain, Programa Consolider, CSD2007-0004, 01-10-2007 to 30-09-2012, Principal investigator: Josep Domingo-Ferrer, 5.428.000,00 euros.
7. *Thematic network on mathematics of the information society*. Ministerio de Educación y Ciencia, Government of Spain, MTM2006-28247-E, 1-10-2007 to 30-9-2008, Principal investigator: Josep M. Miret Biosca, 6.000,00 euros.
8. *Interactive compression and transmission of high-resolution images. Applications to remote sensing, geographic information systems and telemedicine (INCO)*. Ministerio de Educación y Ciencia, Government of Spain, TSI2006-14005-C02-01, 10-1-2006 to 09-30-2009, Principal investigator: Joan Serra Sagristà, 159.841,00 euros.
9. *Equipment of the infrastructure for a cluster*. Government of Catalonia, 2005PEIR0050/26, 12-15-2005 to 12-15-2006, Principal investigator: Josep Rifà Coma, 30.000,00 euros.
10. *Consolidated Catalan research group*. Government of Catalonia, 2005SGR-00319, 10-1-2005 to 10-30-2009, Principal investigator: Josep Rifà Coma.
11. *Thematic network on symbolic computation*. Ministerio de Educación y Ciencia, Government of Spain, MTM2004-21958-E, 9-1-2005 to 9-1-2006, Principal investigator: Tomás Recio, 6.000,00 euros.

12. *Wavelet-based hyperspectral image compression for applications to remote sensing and geographic information systems (WAVEGIS)*. Ministerio de Ciencia y Tecnología, Government of Spain, TIC2003-08604-C04-01, 12-1-2003 to 11-30-2006, Principal investigator: Joan Serra Sagristà, 156.760,00 euros.
13. *Development of a new computer system for structure design and optimal analysis based on the finite elements method and on advanced techniques of symbolic computation (ANDES)*. Ministerio de Educación y Cultura, Government of Spain, TIC99-0762-C02-01, 12-31-1999 to 12-31-2001, Principal investigator: Sebastià Xambó Descamps, 24.600,00 euros.

7. Conference boards

7.1 General chair

1. International School on Coding Theory and Applications. Universitat Rovira i Virgili, Tarragona, February 11-14, 2013.
2. Applied Algebra, Algebraic Algorithms and Error-Correcting Codes. Universitat Rovira i Virgili, Tarragona, June 8-12, 2009.

7.2 Organization of special sessions

1. *El paper del joc en les matemàtiques. El paper de les matemàtiques en el joc*. Special session at the Toy Museum of Catalonia. With the participation of Maria Antònia Canals, Mequè Edo, Guido Ramellini, Quim Tarradas. Figueres, Spain, November 15, 2014.
2. *Matemáticas de la Teoría de la Información*. Sesión especial del Congreso de la Real Sociedad Matemática Española 2013, Santiago de Compostela, Spain, January 21-25, 2013.

7.3 Scientific committees

1. XIII Reunión Española sobre Criptología y Seguridad de la Información (RECSI). Universitat d'Alacant, Alacant, September 2-5, 2014.
2. XII Reunión Española sobre Criptología y Seguridad de la Información (RECSI). Mondragon Unibertsitatea, Donostia, September 4-7, 2012.
3. 3rd International Castle Meeting on Coding Theory and Applications. Universitat Autònoma de Barcelona, Cardona, September 11-15, 2011.
4. VII International Workshop on Coding and Cryptography (WCC). Institut National de Recherche en Informatique et en Automatique (INRIA), Paris, April 11-15, 2011.

5. XI Reunión Española sobre Criptología y Seguridad de la Información (RECSI). Universitat Rovira i Virgili, Tarragona, September 7-10, 2010.
6. Iberian Meeting on Numerical Semigroups, Universidad de Granada, Granada, February 3-5, 2010.
7. 2nd International Castle Meeting on Coding Theory and Applications. Universidad de Valladolid, Castillo de la Mota, Valladolid, September 15-19, 2008. Lecture Notes in Computer Science 5228, ISBN: 0302-9743.

7.4 Organizing committees

1. III Jornadas de la Red Temática de Matemáticas en la Sociedad de la Información (MatSI). Bellaterra, November 25 2011.
2. Privacy in Statistical Databases 2010. UNESCO Chair in Data Privacy, Corfu, Greece, September 22-24, 2010. Lecture Notes in Computer Science 6344, ISBN: 0302-9743.
3. Iberian Meeting on Numerical Semigroups, Universidad de Granada, Granada, February 3-5, 2010.
4. Soria Summer School on Computational Mathematics, Algebraic Coding Theory. Universidad de Valladolid, Campus de Soria, July 2-11, 2008.
5. Sexto Encuentro de Álgebra Computacional y Aplicaciones. Universitat Politècnica de Catalunya, Barcelona, September de 6-8, 2000.

8. Scientific leadership

1. Leader of the research group COPRICA (Codes, Privacy, and Algebraic Combinatorics), Universitat Rovira i Virgili. From 2011.
2. Coordinators board of the Spanish network MatSI (Red Temática de Matemáticas en la Sociedad de la Información). From November 2009 to December 2013.
3. Leader of the research subgroup SPGICI (Spatial Partitioning) within GICI (Group on Interactive Compression of Images), Universitat Autònoma de Barcelona. 2005-2007.

9. Ph.D. advising

1. Klara Stokes: *Combinatorial Structures for Anonymous Database Search*, Universitat Rovira i Virgili, October 18, 2011.

2. Albert Vico Oton: *Collected Results on Semigroups, Graphs and Codes*, Universitat Rovira i Virgili, October 22, 2012.

10. Ph.D. Committees

1. Alexandre Viejo (adv. Francesc Sebé i Josep Domingo-Ferrer), *Security and Privacy Issues in Some Special-Purpose Networks*, Universitat Rovira i Virgili, September 19, 2008.
2. Carla Ràfols (adv. Paz Morillo), *Some Issues in Public Key Cryptography: Hard-Core Predicates, Distributed Protocols and Functional Encryption*, Universitat Politècnica de Catalunya, July 19, 2011.
3. Muhammad Bilal (adv. Joaquim Borges i Cristina Fernández), *Codes Over Rings: Maximum Distance Separability and Self-Duality*, Universitat Autònoma de Barcelona, November 23, 2012.
4. Julián Salas (adv. Camino Balbuena), *On the Structure of Graphs Without Short Cycles*, Universitat Politècnica de Catalunya, December 20, 2012.
5. José Moreira Sánchez (adv. Marcel Fernández Muñoz), *On codes for Traceability Schemes: Constructions and Bounds*, Universitat Politècnica de Catalunya, November 13, 2013.
6. Guadalupe Márquez Campos (adv. José María Tornero Sánchez), *Cálculo de invariantes combinatorios de semigrupos numéricos y aplicaciones*, Universidad de Sevilla, March 3, 2014.
7. Stefano Martin (adv. Olav Geil, Diego Ruano), *Applications of the footprint and the Feng-Rao bounds* Aalborg University, December 8, 2014.

11. Technology and knowledge transfer

1. Collaboration agreement with the company Metriplica S.L. August 2011 to December 2012. Principal investigator at URV: Maria Bras-Amorós, principal investigator at Metriplica: Enric Quintero.
2. *eVerification/2, Verificación electrónica para sistemas de votación electrónica presencial*. Acción Estratégica de Telecomunicaciones y Sociedad de la Información (AVANZA), Ministerio de Industria, Turismo y Comercio, TSI-020100-2011-39, 2011 to 2013. Coordinated by the company SCYTL Secure Electronic Voting, SL. Principal investigator at URV: Jordi Castellà-Roca. 47.526,72 euros (URV).
3. *Audit Transparency Voting Process*. Ministerio de Ciencia e Innovación, Government of Spain, Programa INNFACTO, IPT-430000-2010-31, 6-28-2010 to 12-31-2012. Coordinated by the company SCYTL Secure Electronic Voting, SL.

Principal investigator at URV: Jordi Castellà-Roca. Involved companies: Scytl, Gematic, Kinetical mobility solutions. 212.422,00 euros as a subvention + 1.637.816,75 euros as a loan (212.422,00 euros as a subvention for the CRISES-URV group).

4. *SECloud, investigación y desarrollo de una plataforma SEgura para aplicaciones Cloud computing*. Ministerio de Industria, Turismo y Comercio, Government of Spain, Programa Avanza Competitividad I+D+I, TSI-020302-2010-153, 4-30-2010 to 12-31-2012. Coordinated by the company COM 2002 SL. Principal investigator at URV: Jordi Castellà-Roca. Involved companies: Nexica, Kinamik, Compartia, Cetaqua, Bdigital, Staitec. 522.638,83 euros as a subvention + 1.117.081,62 euros as a loan (78.265,00 euros as a subvention for the CRISES-URV group). <http://www.secloud.es/>
5. *eVerification, Verificación electrónica para sistemas de votación electrónica presencial*. Acción Estratégica de Telecomunicaciones y Sociedad de la Información (AVANZA), Ministerio de Industria, Turismo y Comercio, TSI-020100-2009-720, April 2009 to December 2010. Coordinated by the company SCYTL Secure Electronic Voting, SL. Principal investigator at URV: Jordi Castellà-Roca. 124.380,00 euros (URV) <http://crises-deim.urv.cat/everification>

12. Research stays

Department of Mathematics and Statistics, San Diego State University, California, USA.
August 20 - September 4, 2012.

Postdoctoral stay in collaboration with Michael E. O'Sullivan.

Department of Microelectronic Engineering, Coláiste na hOllscoile Corcaigh (University College Cork), Ireland. July 26 - July 30, 2010.

Research meeting with Emanuel Popovici (UCC), Christian Spagnol (UCC), Shraddha Srivastava (UCC), Michael E. O'Sullivan (SDSU), Kwankyuu Lee (Chosun University, Korea).

Research meeting in Barcelona, July 19 - July 26, 2010.

Collaboration with Michael E. O'Sullivan (SDSU), Kwankyuu Lee (Chosun University, Korea).

Department of Mathematics and Statistics, San Diego State University, California, USA.
January 6 - January 29, 2010.

Postdoctoral stay in collaboration with Michael E. O'Sullivan.

Department of Mathematics and Statistics, San Diego State University, California, USA.
January 12 - February 2, 2009.

Postdoctoral stay in collaboration with Michael E. O'Sullivan.

Dipartimento di Sistemi e Informatica, Università degli Studi di Firenze, Florence, Italy.
August 4 - August 12, 2008.

Postdoctoral stay in collaboration with Prof. Renzo Pinzani and Prof. Elena Barcucci.

Department of Mathematics and Statistics, San Diego State University, California, USA.
January 8 - January 30, 2008.

Postdoctoral stay in collaboration with Michael E. O'Sullivan.

Department of Mathematics and Statistics, San Diego State University, California, USA.
June 1 - September 30, 2007.

Postdoctoral stay in collaboration with Michael E. O'Sullivan.

Departamento de Álgebra, Universidad de Granada, Spain. February 5-12, 2007.

Collaboration with Pedro A. García-Sánchez and José Carlos Rosales.

Department of Mathematics and Statistics, San Diego State University, California, USA.
July 27 - September 5, 2006.

Collaboration with Michael E. O'Sullivan.

Departamento de Álgebra, Universidad de Granada, Spain. September 8-14, 2004.

Collaboration with Pedro A. García-Sánchez.

Departamento de Álgebra, Universidad de Granada, Spain. November 8-15, 2003.

Collaboration with Pedro A. García-Sánchez.

Department of Mathematics and Computing Science, Technische Universiteit Eindhoven, Holland. March 9-15, 2003.

Collaboration with Ruud Pellikaan.

Department of Mathematics and Statistics, San Diego State University, California, USA.
June 22 - December 22, 2002.

Pre-doctoral research stay under supervision of Michael E. O'Sullivan.

Department of Mathematics and Statistics, San Diego State University, California, USA.
February 27 - May 23, 2001.

Pre-doctoral research stay under supervision of Michael E. O'Sullivan.

13. Personal grants

Ramón y Cajal Programme. Ministerio de Educación y Ciencia, Government of Spain.
July 2007.

Post-doctoral grant. Government of Catalonia. June to September, 2007.

Pre-doctoral grant (FI). Government of Catalonia. February 1999 to December 2002.

Grant for collaboration with the Departament de Matemàtica Aplicada 2. UPC. Government of Spain. 1997-1998.

14. Evaluation boards

Evaluation of candidates for the program of postdoctoral scholarships of Fundació "La Caixa".

15. Curatorship of exhibitions

Curator of the exhibition: *Math games. Mathematical amusements*. Toy Museum of Catalonia. October 26, 2014, to January 11, 2015.