

Antonio Campello

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EDUCATION

PhD Candidate (2010-present) **Expected Completion: March 2014**

Department of Applied Mathematics,
University of Campinas (UNICAMP), Brazil
Advisor: Sueli Irene Rodrigues Costa.
Fellowship: São Paulo Research Foundation (FAPESP)

Bachelor Degree (2006-2009)

Computational and Applied Mathematics,
University of Campinas (UNICAMP), Brazil.

EXPERIENCE

Visiting Scholar (Dec 2012 – Jun 2013), AT&T Labs - Research, Shannon Labs, Florham Park, NJ, USA. Host: Vinay A. Vaishampayan. Topics: Codes for continuous alphabet sources, Reliability Analysis of Distributed Storage Systems.

Visiting Scholar (Jul – Sep 2011), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland. Special Semester on Combinatorial, Algebraic and Algorithmic Aspects of Coding Theory

Visiting Scholar (Jan – Jun 2009), Universidad Complutense de Madrid (UCM), Madrid, Spain
Courses Taken: Stochastic Processes, Game Theory, Introduction to Quantum Information and Computation. Grant: Santander Scholarship.

Teaching: University of Campinas

Courses: Numerical Calculus (Aug – Dec 2013), Multivariable Calculus (Feb – Jun 2012), Numerical Analysis (Feb – Jun 2011), Linear Algebra (Aug – Dec 2007),

AWARDS AND HONORS

2012: Best paper award in the XXX Brazilian Symposium of Telecommunications

2009: Bachelor Degree with honors in Applied Mathematics, University of Campinas

2009: Beatriz Neves Scientific Initiation Award (Brazilian Society of Computational And Applied Mathematics) - best undergraduate research work in Applied Mathematics

PUBLICATIONS

Journal Papers

Campello, A.; Strapasson, J.; Costa, S. I. R. "On Projections of Arbitrary Lattices", *Linear Algebra and its Applications*, v. 439, p. 2577-2583, 2013

Campello, A.; Torezzan, C; Costa, S. I. R. "Curves on Flat Tori and Analog Source-Channel Codes", to appear in *IEEE Transactions on Information Theory*, v.59, no. 10, pp. 6646-6654, 2013

Campello, A.; Strapasson, J., "On Sequences of Projections of the Cubic Lattice", *Computational & Applied Mathematics*, Springer, v. 32, no. 1, pp.57-69, 2013

Conference papers

Campello, A.; Vaishampayan, V.; "Reliability of Erasure Coded Storage Systems: A Geometric Approach", IEEE Intl. Conf. on Big Data, Workshop on Distributed Storage Systems and Coding for Big Data, 2013.

Campello, A.; Vaishampayan, V.; Costa, S. I. R., "Projections, Dissections and Bandwidth Expansion Mappings", *IEEE Information Theory Workshop (ITW)*, Sevilla, Spain, 2013.

Jorge G. C.; Campello, A.; Costa, S. I. R., "q-ary lattices in the l_p norm and a generalization of the Lee metric", *Workshop on Coding and Cryptography (WCC)*, Bergen, Norway, 2013 (A preliminary version of this work appeared in the XXX Brazilian Symposium of Telecommunications)

Costa, S. I. R; Torezzan, C.; Campello, A.; Vaishampayan, V., "Flat tori, lattices, and spherical codes", *Information Theory and Applications (ITA)*, San Diego, CA, USA, 2013 (Invited Paper)

Campello, A.; Torezzan, C.; Costa, S. I. R.; "Curves on torus layers and coding for continuous alphabet sources", *IEEE International Symposium on Information Theory (ISIT)*, MIT, Boston, USA, 2012

Campello, A.; Jorge, G. C.; Costa, S. I. R, "q-ary lattices in the l_p norm and a generalization of the Lee metric." (Portuguese), XXX Brazilian Symposium of Telecommunications, 2012, **Best Paper Award**

Jorge, G.C.; Campello, A.; Costa, S.I.R.; "A study of Construction B lattices" (Portuguese), *Proceedings of Brazilian Telecommunication Symposium (SBTr)*, 2012

Campello, A.; Jorge, G.C.; Costa, S.I.R.; , "Decoding q-ary lattices in the Lee metric," *IEEE Information Theory Workshop (ITW)*, Paraty, Brazil, 2011

Silva, R.; Campello, A.; Dahab, R.; , "LWE-based identification schemes," *IEEE Information Theory Workshop (ITW)*, Paraty, Brazil, 2011

In preparation/Submitted

Campello, A.; Vaishampayan, V. "Reliability of Erasure Coded Storage Systems: A Geometric Approach" (in preparation. A preliminary version appeared at the IEEE Intl. Conf. on BigData)

Campello, A.; Jorge, G. C.; Costa, S. I. R. "Decoding Integer Lattices in the Lee Metric", submitted to SIAM J. Discrete Math.

OTHER PROFESSIONAL ACTIVITIES

IEEE Information Theory Society Student Member

Reviewer : Designs, Codes and Cryptography (2013), European Journal of Combinatorics (2013), International Conference on Information Theoretic Security (ICITS 2013), IEEE Transactions on Information Theory (2012), Brazilian Telecommunications Symposium (2011, 2012 and 2013)

SELECTED TALKS AND POSTERS

Projections, Dissections and Bandwidth Expansion Mappings, Information Theory Workshop, Sevilla, Spain (2013)

Projections, Dissections and Bandwidth Expansion Mappings, North American School of Information Theory - poster, Purdue University (2013)

Curves on Torus Layers and Coding for Continuous Alphabet Sources, North American School of Information Theory – poster, Cornell University, (2012)

Curves on Torus Layers and Coding for Continuous Alphabet Sources, International Symposium on Information Theory - talk, MIT (2012)

Projections of the Cubic Lattice and its Applications, Workshop on Algebraic Coding Theory – invited talk, EPFL – Switzerland (2011)

Decoding q-ary lattices in the Lee Metric, Information Theory Workshop, Paraty, Rio de Janeiro (2011)

LWE-based Identification Schemes, Information Theory Workshop, Paraty, Rio de Janeiro (2011)

OTHER INFORMATION

Language Skills: Portuguese (mother tongue), English (fluent), Spanish (fluent), French (intermediate comprehension and reading).

Programming Skills: Matlab, Wolfram Mathematica, C/C++