Eduardo Camps Moreno

◉ Presidential Postdoctoral Fellow, Virginia Tech

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🌐 https://sites.google.com/view/ecampsm/

Positions held

2023 – present **Postdoctoral Fellow**
Virginia Tech

2022 – 2023 **Visiting Scholar**
Cleveland State University

Education

2019 – 2023 **Ph. D.**
National Polytechnic Institute of Mexico.
- Dissertation: Algebraic coding theory for three models of communication: decreasing codes, sum-rank metric codes and hulls of linear codes.
- Advisors: Dr. Eliseo Sarmiento Rosales and Dr. Hiram H. López Valdez (Virginia Tech).

2017 – 2019 **M. Sc.**
National Polytechnic Institute of Mexico.
- Dissertation: Algebraic geometric codes and Polar Codes.
- Advisor: Dr. Eliseo Sarmiento Rosales.

2011 – 2016 **Major in Physics and Mathematics**
National Polytechnic Institute of Mexico.
- Dissertation: The second generalized Hamming weight of codes from a projective torus.
- Advisor: Dr. Eliseo Sarmiento Rosales.

Journal articles

2023

Camps-Moreno, E., García-Marco, I., López, H., Márquez-Corbella, I., Martńez-Moro, E. & Sarmiento, E. On generalized Hamming weights of Hyperbolic Codes. To appear in Journal of Algebra and its Applications

2022

Camps Moreno, E., Kohne, C., Sarmiento, E., & Van Tuyl, A. On the Waldschmidt constant of square-free principal Borel ideals. Proceedings of the American Mathematical Society 150 (2022), pp. 4145-4157

2022

Camps-Moreno, E., Gorla, E., Landolina, C., García, E. L., Martínez-Peñas, U., & Salizzoni, F. Optimal Anticodes, MSRD Codes and Generalized Weights in the Sum-Rank Metric. IEEE Transactions on Information Theory 68(6) (2022), pp. 3806–3822

2021

Ball, T., Camps, E., Chimal-Dzul, H., Jaramillo-Velez, D., López, H., Nichols, N., ... & Whieldon, G. Coding theory package for Macaulay2. Journal of Software for Algebra and Geometry, 11(1) (2021), pp. 113-122.

2021

Camps, E., López, H. H., Matthews, G. L., & Sarmiento, E. Polar decreasing monomial-Cartesian codes. IEEE Transactions on Information Theory 67(6) (2021), pp. 3664–3674.

2020

Camps-Moreno, E., Kohne, C., Sarmiento, E., & Van Tuyl, A. Powers of principal Q-Borel ideals. Canadian Mathematical Bulletin 65(3) (2020), pp. 633–652.

2020

Camps-Moreno, E., Martínez-Moro, E., & Rosales, E. S. Vardøhus codes: Polar codes based on castle curves kernels. IEEE Transactions on Information Theory, 66(2) (2020), pp. 1007-1022.

2018

Sarabia, M. G., Camps, E., Sarmiento, E., & Villarreal, R. H. The second generalized Hamming weight of some evaluation codes arising from a projective torus. Finite Fields and Their Applications, 52 (2018), pp. 370-394.

Refereed conference papers

2020

Camps, E., López, H., Matthews, G., & Sarmiento, E. Monomial-Cartesian codes closed under divisibility. In Proc. 14th Int. Conf. Finite Fields Appl. (2020) pp. 199-208.

Preprints

2022

Anderson, S. E., Camps-Moreno, E., López, H. H., Matthews, G. L., Ruano, D., & Soprunov, I. Relative hulls and quantum codes. arXiv preprint arXiv:2212.14521.

2021

Camps-Moreno, E., López, H., Mathhews, G., Explicit non-special divisors of small degree and LCD codes from Kummer extensions. arXiv preprint arXiv:2112.13424.

Research Visits

August, 2022-June, 2023

"Isometries of classic codes and stabilizer quantum codes". Cleveland State University, USA. Mentor: Dr. Hiram H. López Valdez

October, 2020-August, 2021

"Rank-metric codes". Neuchâtel University, Switzerland. Mentor: Dr. Elisa Gorla.

January 2020-June 2020

"Principal Q-Borel ideals". McMaster University, Canada. Mentor: Dr. Adam Van Tuyl.

September, 2018-January, 2019

"Algebraic aspects of polar codes". University of Valladolid, Spain. Mentor: Dr. Edgar Martínez Moro.

Meetings and Workshops

July 2023

A workshop week in Algebraic Coding Theory at Riva San Vitale.

November 2022

A workshop week in Algebraic Coding Theory at Virginia Tech (ACTiV(T)).

August 2022

Quantum Error Correction. Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, USA.

April 2022

Algebraic Methods in Coding Theory and Communication. Casa Matemática Oaxaca, Mexico.

May 2020

Virtual Macaulay2 Workshop, Cleveland State University, USA. I was part in the development of the package "Coding Theory".

Presentations

October 2023

Mexican Mathematical Society National Congress, San Luis Potosí, México. Title: Introducción a códigos cuánticos.

October 2023

(Online) Lower Bavarian and Upper Austrian Computer Algebra Seminar (NOCAS). Title: Introduction to Evaluation codes.

July 2023

SIAM-AG 23 at Eindhoven. Title: Permutations of some evaluation codes.

April 2023

35th Symposium in Mathematics and Statistics, Eastern Kentucky University, Kentucky, USA. Title: Hulls of linear codes.

April 2023

Math Colloquium at Cleveland State University. MSRD codes and optimal anticodes in the Sum-Rank Metric.

March 2023

SIAM-SEAS at Virginia Tech. Title: MSRD codes and optimal anticodes in the Sum-Rank Metric.

November 2022

ACTiV(T) at Virginia Tech. Title: Isometries of classical codes and quantum computation.

November 2022

Algebra Seminar at Virginia Tech. Title: Principal Q-Borel ideals.

October 2022

MathClub at Cleveland State University. Title: Introduction to Coding Theory.

October 2022

(Online) PICS seminar. Title: Hulls of linear Codes.

September 2022

TAG Seminar at Cleveland State University (3 sessions). Title: Q-Borel ideals and their resolutions.

July 2022

Coding theory and cryptography A conference in honor of Joachim Rosenthal's 60th birthday. Zurich, Switzerland. Title: Non-Special Divisors of Small Degrees and LCD Codes from Hermitian curves.

June 2022

Effective Methods in applied Geometry (MEGA) 2022, Krakow, Poland. Title: Explicit Non-Special Divisors of Low Degree of Some Curves.

October-November 2021

TAG Seminar at Cleveland State University (2 sessions). Title: Principal Q-Borel ideals.

August 2021

(Online) Mathematical Congress of the Americas. Title: Monomial decreasing codes.

July 2021	(Online) Meeting of the SMM and RSME. Title: Introduction to polar codes.
March 2021	Seminar of Algebra, Geometry and Singularities, La Laguna University, Tenerife, Spain. Title: Introduction to polar codes.
December 2020	(Online) Seminar of Codes and Cryptography, Zurich University, Switzerland. Title: Monomial decreasing codes.
October 2019	LXII National Conference of Mathematics by the Mexican Mathematical Society, Monterrey, Mexico. Title: Vardøhus Codes.
May 2019	Latinoamerican Colloquium of Algebra, Mexico City, Mexico. Poster: Vardøhus Codes.
April 2019	XIII National Colloquium of codes, cryptography and related areas, Mexico City, Mexico. Title: Polar Codes over Castle Curves.
October 2015	XLVIII National Conference of Mathematics by the Mexican Mathematical Society, Hermosillo, Mexico. Poster: Google's Pagerank.

Teaching Experience

September 2022 – May 2023

Instructor
Cleveland State University
- Calculus II, Fall 2022.
- Calculus II, Spring 2023.

July 2016 – August 2018

Teaching Assistant
Universidad Autónoma Metropolitana, Azcapotzalco.
- Calculus, algebra, complex analysis and differential equations.

August 2014 – January 2020

Teaching Assistant
Instituto Politécnico Nacional, Mexico
- I assisted several courses such as Calculus III, Numerical Analysis, Modern Algebra II, among others.

Scholarships and Awards

September 2020

Swiss Government Excellence Scholarships for Foreign Scholars and Artists.

October 2018

Sotero Prieto Prize, edition 2018. Given by the Mexican Mathematical Society to the best undergraduate works on mathematics.

Organizer

SIAM23

Along with Giuseppe Cotardo, we organized a Coding Theory session for SIAM-AG 23.

SMM 21

Dr. Hiram H. López Valdez and I organized the special session of Coding Theory at the 54 National Mathematics Congress of the Mexican Mathematical Society.

Reviewer

Journals

IEEE Transactions on Information Theory.

São Paulo Journal of Mathematical Sciences.

Conferences

WCC 2022: The Twelfth International Workshop on Coding and Cryptography

Abstracts

ZbMath.

Languages

Spanish
Native

English
Fluent