

GENERALITIES

Born in Verona, Italy. Italian citizen.
Languages: English (fluent), French (good), Italian (native).

EDUCATION

- **PhD in Mathematics**, University of Neuchâtel, Switzerland, Sept. 2016.
Advisor: Elisa Gorla.
- **MSc in Mathematics**, University of Trento, Italy, Mar. 2012.
Advisors: Edoardo Ballico, Massimiliano Sala.
- **BSc in Mathematics**, University of Trento, Italy, Sept. 2010.
Advisor: Edoardo Ballico.

APPOINTMENTS

- **Chair of Mathematical Communication Theory**, since Nov. 2021.
Department of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands.
- **Associate Professor of Mathematics**, since Nov. 2021.
Department of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands.
- **Assistant Professor of Mathematics** (tenured), Dec. 2021 – Oct. 2022.
Department of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands.
- **Assistant Professor of Mathematics** (on tenure-track), Jan. 2020 – Nov. 2021.
Department of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands.
- **Marie Curie Research Fellow**, May 2018 – Dec. 2019.
School of Mathematics and Statistics, University College Dublin, Ireland.
- **Research Fellow**, Oct. 2017 – Apr. 2018.
School of Mathematics and Statistics, University College Dublin, Ireland.
- **Postdoctoral Fellow**, Oct. 2016 – Sept. 2017.
Department of Electrical and Computer Engineering, University of Toronto, Canada.
- **PhD Candidate and Teaching Assistant**, Sept. 2012 – Oct. 2016.
Department of Mathematics, University of Neuchâtel, Switzerland.

AWARDS, GRANTS, PRIZES

- 4TU Collaboration Grant from the Netherlands Institute for Research on Information and Computer Technology (4TU.NIRICT), co-PI [EUR 15k], 2022–2023.
- Horizon Europe Doctoral Network Grant (MSCA-DN) of the European Commission, to establish an international doctoral network, co-PI [EUR 2M], 2022–2026.

- Excellent Course Evaluation Award (teaching award) from Eindhoven University of Technology, 2022.
- Early Career Award of the Royal Academy of Arts and Sciences of the Netherlands – KNAW [EUR 15k], 2021 ([link to TU/e press release](#), [link to KNAW press release](#)).
- VIDI Grant of the Dutch Research Council NWO, PI [EUR 1.1M], 2021–2026 ([link to press release](#)).
- Visitor Grant of the DIAMANT Cluster, the Netherlands (with A. Gruica), 2021.
- Science-KLEIN Grant of the Dutch Research Council NWO, PI [EUR 309k], 2021–2025.
- Excellent Course Evaluation Award (teaching award) from Eindhoven University of Technology, 2021.
- Visitor Grant of the DIAMANT Cluster, the Netherlands, 2020.
- Ambizione Research Grant of the Swiss Science Foundation, PI [CHF 586k], 2019–2023 — *declined*.
- Dissemination & Outputs Award from University College Dublin, Ireland, 2019.
- Nexans Prize 2017, from the Nexans Cultural Foundation Switzerland, for “the brilliant international academic path and the remarkable contributions to coding theory” [CHF 20k], 2017 ([link to press release](#)).
- Postdoc Grant of the Irish Research Council, PI [EUR 92k], 2017–2019 — *declined*.
- Marie Curie Individual Fellowship (H2020, Mathematics), PI [EUR 176k], 2017–2019.
- Prize “Léon Du Pasquier et Louis Perrier” of the University of Neuchâtel (Switzerland) for the best PhD thesis in the Faculty of Science in the academic year 2015–16 [CHF 2k], 2016.
- Mobility Grant of the Swiss Science Foundation, PI [CHF 67k], 2016–2018.
- Scholarship of the Italian Institute for Mathematics INdAM (success rate 6.5%), 2007–2010.
- Indirect funding as postdoc mentor (not PI):
 - Mobility Grant of the Swiss Science Foundation to Violetta Weger, 2022–2024.
 - Marie Curie EuroTech Postdoc Grant to Violetta Weger, 2022–2024.
 - Mobility Grant of the Swiss Science Foundation to Gianira N. Alfrano, 2022–2024.
 - Marie Curie EuroTech Postdoc Grant to Elena Berardini, 2021–2023.
 - Visiting Postdoc Fellowship of the Italian “Accademia dei Lincei” to Ferdinando Zullo, 2021.
- Travel awards (selection):
 - Travel support from several institutions in connection with research visits, 2014 – present.
 - Travel award from ICERM (Brown University, RI, USA), 2018.
 - 7 travel awards from the COST Action IC1104 (Horizon 2020 programme) in the period 2013–2016.
 - 5 travel awards of the Swiss Mathematical Society in the period 2013–2016.
 - Financial support from the Twinning Project n. 692178 (H2020) as invited lecturer, 2016.
 - Travel Award of the Society for Industrial and Applied Mathematics (SIAM), 2015.
 - Travel Award of the Society for Industrial and Applied Mathematics (SIAM), 2013.
- Smaller student awards:
 - Springer Best Talk award, Swiss Graduate Colloquium, Lausanne, 2015.
 - Springer Best Talk award, Swiss Graduate Colloquium, Fribourg, 2013.
 - Prize of the University of Trento (Italy) for academic records, 2013.
 - Prize from the Italian Ministry of Education for school records, 2007.

RESPONSIBILITIES

- International scientific responsibilities:
 - Member of the Advisory Board of the MEGA conference series, since June 2022.
 - Member of the Executive Committee of the conference MEGA 2022 (Effective Methods in Algebraic Geometry), Krakow, Poland, 2022.
 - Activity as reviewer:
 - * Proposal reviewer for: the Natural Sciences and Engineering Research Council of Canada (in 2021), the German Research Foundation (in 2021), and the Israel Science Foundation (in 2020).

- * Book reviewer for the Dutch Royal Mathematical Society, 2020.
- * Regularly serve as reviewer for international journals in applied mathematics and information theory, including: SIAM Journal on Applied Algebra and Geometry; SIAM Journal on Discrete Mathematics; Designs, Codes and Cryptography; IEEE Transactions on Information Theory; Journal of Combinatorial Theory A; Discrete Mathematics; Journal of Algebraic Combinatorics; Finite Fields and Their Applications; Applicable Algebra in Engineering, Communication and Computing; Advances in Mathematics of Communications; Journal of Algebra and Its Applications.
- * Regularly serve as reviewer for international conferences in mathematics and information theory.
- Responsibilities at Eindhoven University of Technology:
 - Member of the Complaints Committee for Undesirable Behavior of Eindhoven University of Technology, since Apr. 2022.
 - Member of the Onboarding Committee of the Department of Mathematics and Computer Science of Eindhoven University of Technology, since Mar. 2022 — project currently on hold.
 - Member of the Discrete Mathematics Sounding Board of the B.Sc. Curriculum Committee for Mathematics of Eindhoven University of Technology, 2021–22.
 - Representative of the Discrete Mathematics Cluster of Eindhoven University of Technology in the “National Strategic Assessment of Mathematical Research 2015–2020”, 2021–22.
- Organization of scientific events:
 - Organizer, jointly with R. Eggermont and T. Lange, of the SIAM AG23 Conference on Applied Algebraic Geometry, Eindhoven, the Netherlands, planned for July 2023.
 - Organizer, jointly with E. Byrne and J. Sheekey, of a coding theory symposium within the 23rd Conference of the Linear Algebra Society (ILAS 2020), Galway, Ireland, June 2022.
 - Organizer, jointly with H. López, of various invited talk sessions (16 speakers) within the SIAM AG21 Conference on Applied Algebraic Geometry, Texas A&M, August 2021.
 - Organizer, jointly with A. Caminata, of various invited talk sessions (45 speakers) within the SIAM AG19 Conference on Applied Algebraic Geometry, Bern, Switzerland, July 2019.
 - Organizer, jointly with F. Manganiello and G. Matthews, of various invited talk sessions (15 speakers) within the SIAM AG17 Conference on Applied Algebraic Geometry, Atlanta, USA, Aug. 2017.
 - Organizer, jointly with F. Manganiello, of various invited talk sessions (15 speakers) within the SIAM AG15 Conference on Applied Algebraic Geometry, Daejeon, South Korea, Aug. 2015.
 - Co-organizer of the Coding Theory and Cryptography Seminar, joint between the universities of Neuchâtel and Zurich, in the period 2013 – 2016. Principal organizers: E. Gorla and J. Rosenthal.

QUALIFICATIONS AND PROFESSIONAL TRAINING

- *Ius promovendi* of the Dutch academic system, Eindhoven University of Technology, Nov. 2022.
- Completed the Academic Leadership Training at Eindhoven University of Technology, 2022.
- Teaching Qualification Certificate (BKO) from Eindhoven University of Technology, 2021. — *The BKO is a professional training program aimed at forming an original view of university education via courses, individual coaching, and the writing of a personal teaching portfolio.*
- Attended specialized courses on mentoring and assessment at University College Dublin, Ireland, 2019.
- “Maître de Conférence” qualification of the French academic system (Mathematics section), 2019.

MEMBERSHIPS

- Member of the Academic Cybersecurity Society of the Netherlands (ACCSS), since 2021.
- Member of the Center for Quantum Materials and Technology (QT/e) of Eindhoven University of Technology, since 2021.
- Member of the SI(AG)² Activity Group on Algebraic Geometry, in 2017, 2019, and then since 2021.

- Member of the Society for Industrial and Applied Mathematics (SIAM), in 2017, 2019, and then since 2021.
- Member of the DIAMANT Cluster (Discrete, Interactive and Algorithmic Mathematics, Algebra and Number Theory), the Netherlands, since 2020.
- Life member of the Marie Curie Alumni Association, since 2018.
- Member of the COST Action n. IC1104 “Random Network Coding and Designs over $\text{GF}(q)$ ”, 2012–2016.
- Nominated student member of the Society for Industrial and Applied Mathematics (SIAM) and of the SIAM (AG)² Activity Group on Algebraic Geometry, 2013 – 2016.

MENTORING

- PhD students:
 - Altan Berdan Kılıç, since Oct. 2021.
 - Alex Pellegrini, since Oct. 2020 (co-advised with T. Lange).
 - Anina Gruica, since May 2020.
 - Giuseppe Cotardo, since Sept. 2018 (co-advised with E. Byrne). Obtained PhD in June 2022.
- Postdocs:
 - Gianira N. Alfarano, starting in Oct. 2022.
 - Violetta Weger (co-hosted with Technical University of Munich), starting in Sept. 2022.
 - Elena Berardini, since Feb. 2022.
- MSc/BSc students:
 - Aline Marti (co-advised with A. Gruica), starting in Sept. 2022.
 - Anne Nijsten (co-advised with A. B. Kılıç and R. Pellikaan), since Feb. 2022.
 - Lenka Bachoríková (co-advised with E. Berardini), since Feb. 2022.
 - Koen A. Pietersen (co-advised with A. Gruica), since Oct. 2020.
 - Giuseppe Cotardo (co-advised with E. Ballico and E. Byrne), obtained MSc in 2018.
 - Assisted in the supervision of various BSc/MSc students at University of Neuchâtel and University College Dublin as a PhD student and postdoc in the period 2016–19.
- Internship students:
 - Lenka Bachoríková (internship with Intrinsic ID, Eindhoven), Sept. 2021– Mar. 2022.

TEACHING EXPERIENCE

- At Eindhoven University of Technology, the Netherlands:
 - Spring 2023 [scheduled]: lecturer of “Coding Theory” (offered in the Dutch MasterMath program).
 - Fall 2022 [scheduled]: lecturer of “The Effectiveness of Mathematics”.
 - Fall 2022 [scheduled]: supervisor for the “Modelling Week”.
 - Spring 2022: lecturer of “Coding Theory” (offered in the Dutch MasterMath program).
 - Fall 2021: lecturer of “The Effectiveness of Mathematics”.
 - Spring 2021: lecturer of “Coding Theory” (offered at TU/e and in the Dutch MasterMath program).
 - Fall 2020: lecturer of “The Effectiveness of Mathematics”.
 - Spring 2020: lecturer of “Coding Theory”.
- At University College Dublin, Ireland:
 - Fall 2019: lecturer of “Matrix Algebra”.
 - Spring 2018: guest lecturer of “Coding Theory”.
 - Fall 2018: guest lecturer of “Linear Algebra”.

- At University of Neuchâtel, Switzerland: teaching assistant, in the period 2012–2016, for the following courses: “Coding Theory”, “Cryptography”, “Matroid Theory”, “Topology”, “Numerical Analysis”, “Calculus”, “Vector Analysis”, “Stochastic Processes” (service course offered in the MSc in Statistics).
- Elsewhere:
 - Invited lecturer at the graduate school “Algebraic and Geometric Techniques in Contemporary Coding Theory and Cryptography”, University of Campania L. Vanvitelli, Italy, July 2022.
 - Invited lecturer for a graduate course on coding theory, University of Verona, Italy, April 2022.
 - Invited lecturer at the graduate school “Algebraic Coding Theory”, Zurich, Switzerland, June 2021.
 - Invited lecturer at the graduate school “International Workshop on Cryptography and Coding Theory” for a course on network coding and rank-metric codes, SGGGS Institute of Engineering and Technology, Nanded, India, March 2021.
 - Invited lecturer for a MSc course on coding theory at the University of Iași, Romania, in the framework of the Horizon 2020 Twinning Project n. 692178, April 2016.

RESEARCH STAYS

- University of Verona, Italy, Apr. 2022.
- University of Neuchâtel, Switzerland, Nov. 2021.
- University of Neuchâtel, Switzerland, Mar. 2020.
- University of South Florida, Tampa, USA, Dec. 2019.
- University of Neuchâtel, Switzerland, June 2019.
- University of Paris 8, France, Dec. 2018.
- University of Kentucky, USA, Oct. 2018.
- University of Kentucky, USA, Mar. 2017.
- Clemson University, USA, Jan. 2017.
- University College Dublin, Ireland, Oct. 2015.
- University of Montpellier, France, Jan. 2015.
- Autonomous University of Barcelona, Spain, Dec. 2014.

PUBLICATIONS AND PREPRINTS

most of my work is also available on arxiv.org

51. **Rook theory of the Etzion-Silberstein Conjecture** (with A. Gruica).
Submitted, 2022.
50. **Densities of codes of various linearity degrees in translation-invariant metric spaces** (with A. Gruica, A.-L. Horlemann, N. Willenborg).
Submitted, arXiv: [2208.10573](https://arxiv.org/abs/2208.10573), 2022.
49. **Generalised scattered subspaces** (with A. Gruica, J. Sheekey, F. Zullo).
Submitted, arXiv: [2207.01027](https://arxiv.org/abs/2207.01027), 2022.
48. **Rank-metric lattices** (with G. Cotardo).
Submitted, arXiv: [2206.09284](https://arxiv.org/abs/2206.09284), 2022.
47. **Network decoding** (with A. Beemer and A. B. Kılıç).
Submitted, arXiv: [2205.14655](https://arxiv.org/abs/2205.14655), 2022.
46. **Rank-metric codes, semifields, and the average critical problem** (with A. Gruica, J. Sheekey, F. Zullo).
Submitted, arXiv: [2201.07193](https://arxiv.org/abs/2201.07193), 2022.
45. **Generalized weights of codes over rings and invariants of monomial ideals** (with E. Gorla).
Submitted, arXiv: [2201.05813](https://arxiv.org/abs/2201.05813), 2022.
44. **Rank-metric codes and their parameters** (with A. Gruica and A. B. Kılıç).
Submitted (invited book chapter, Springer Lecture Notes in Mathematics), 2022.

43. **Network decoding against restricted adversaries** (with A. Beemer and A. B. Kılıç).
Proceedings of MTNS 2022, to appear.
42. **Dual-code bounds on multiple concurrent (local) data recovery** (with G. N. Alfarano and E. Soljanin).
Proceedings of ISIT 2022.
41. **Linear cutting blocking sets and minimal codes in the rank metric** (with G. Alfarano, M. Borello, A. Neri).
Journal of Combinatorial Theory, Series A, to appear.
40. **The curious case of the Diamond Network** (with A. Beemer).
Extended abstract (refereed) at WCC 2022, University of Rostock, Germany, 2022.
39. **Anticodes in the sum-rank metric** (with E. Byrne, H. Gluesing-Luerssen).
Linear Algebra and Its Applications, 643 (2022), pp. 80–98.
38. **Common complements of linear subspaces and the sparseness of MRD codes** (with A. Gruica).
SIAM Journal on Applied Algebra and Geometry, 6 (2022), 2, pp. 79–110.
37. **Parameters of codes for the binary asymmetric channel** (with G. Cotardo).
IEEE Transactions on Information Theory, 68 (2022), 5, pp. 2941–2950.
36. **Three combinatorial perspectives on minimal codes** (with G. Alfarano, M. Borello, A. Neri).
SIAM Journal on Discrete Mathematics, 36 (2022), 1, pp. 461–489.
35. **Whitney numbers of combinatorial geometries and higher-weight Dowling lattices.**
SIAM Journal on Applied Algebra and Geometry, 6 (2022), 2, pp. 156–189.
34. **The typical non-linear code over large alphabets** (with A. Gruica).
Proceedings of ITW 2021.
33. **Fundamental properties of sum-rank-metric codes** (with E. Byrne, H. Gluesing-Luerssen).
IEEE Transactions on Information Theory, 67 (2021), 10, pp. 6456 – 6475.
32. **Rank-metric codes, gen. binomial moments and their zeta functions** (with E. Byrne, G. Cotardo).
Linear Algebra and Its Applications, 604 (2020), 1, pp. 92–128.
31. **Partitions of matrix spaces with an application to q -rook polynomials** (with H. Gluesing-Luerssen).
European Journal of Combinatorics, 89 (2020).
30. **Rank-metric codes and q -polymatroids** (with E. Gorla, R. Jurrius, H. López).
Journal of Algebraic Combinatorics, 52 (2020), pp. 1–19.
29. **Matrix codes and rook theory.**
In the Oberwolfach Report of the conference “Contemporary Coding Theory” (ID 1912), 2019.
28. **Partition-balanced families of codes and asymptotic enumeration in coding theory** (with E. Byrne).
Journal of Combinatorial Theory, Series A, 171 (2020).
27. **Tensor representation of rank-metric codes** (with E. Byrne, A. Neri, J. Sheekey).
SIAM Journal on Applied Algebra and Geometry, 3 (2019), 4, pp. 614–643.
26. **An Assmus-Mattson theorem for rank-metric codes** (with E. Byrne).
SIAM Journal on Discrete Mathematics, 33 (2019), 3, pp. 1242–1260.
25. **On the sparsity of MRD codes** (with E. Byrne).
Proceedings of WCC 2019.
24. **Adversarial network coding** (with F. R. Kschischang).
IEEE Transactions on Information Theory, 65 (2019), 1, pp. 198 – 219.
23. **Duality of codes supported on regular lattices, with an application to enumerative combinatorics.**
Designs, Codes and Cryptography, 86 (2018), 9, pp. 2035 – 2063.
22. **Codes endowed with the rank metric** (with E. Gorla).
In “Network Coding and Subspace Designs”, M. Greferath, M. O. Pavčević, N. Silberstein and M. Á. Vázquez-Castro – Eds., Springer, 2018.
21. **An algebraic framework for end-to-end physical-layer network coding** (with E. Gorla).
IEEE Transactions on Information Theory, 64 (2018), 6, pp. 4480 – 4495.

20. **Matrix codes with the rank metric and their covering radii** (with E. Byrne).
Proceedings of MTNS 2018.
19. **Weight distribution of rank-metric codes** (with J. de la Cruz, E. Gorla, H. López).
Designs, Codes and Cryptography, 86 (2018), 1, pp. 1–16.
18. **Covering radius of matrix codes endowed with the rank metric** (with E. Byrne).
SIAM Journal on Discrete Mathematics, 31 (2017), 2, pp. 927 – 944.
17. **Subspace codes from Ferrers diagrams** (with E. Gorla).
Journal of Algebra and Its Applications, 16 (2017), n. 7.
16. **On the rank-metric covering radius** (with E. Byrne).
Proceedings of WCC 2017.
15. **Optimal Ferrers diagram rank-metric codes** (with T. Etzion, E. Gorla, A. Wachter-Zeh).
IEEE Transactions on Information Theory, 64 (2016), n. 4, pp. 1616 – 1630.
14. **Generalized weights: An anticode approach.**
Journal of Pure and Applied Algebra, 220 (2016), n. 5, pp. 1946 – 1962.
13. **Equidistant subspace codes** (with E. Gorla).
Linear Algebra and its Applications, 490 (2016), pp. 48 – 65.
12. **Rank-metric codes and their duality theory.**
Designs, Codes and Cryptography, 80 (2016), n. 1, pp. 197–216.
11. **Embedding Suzuki curves in \mathbb{P}^4** (with E. Ballico).
Journal of Commutative Algebra, 7 (2015), n. 2, pp. 149 – 166.
10. **Subspace codes from Ferrers diagrams** (with E. Gorla).
Proceedings of MEGA 2015.
9. **A zero-dimensional approach to Hermitian codes** (with E. Ballico).
Journal of Pure and Applied Algebra, 219 (2015), n. 4, pp. 1031 – 1044.
8. **On the geometry of Hermitian one-point codes** (with E. Ballico).
Journal of Algebra, 397 (2014), pp. 499 – 514.
7. **Partial spreads in random network coding** (with E. Gorla).
Finite Fields and Their Applications, 26 (2014), pp. 104 – 115.
6. **On the dual minimum-weight codewords of one-point Goppa codes** (with E. Ballico).
21st International Symposium on Mathematical Theory of Networks and Systems – MTNS 2014.
5. **Classification of binary systematic codes of small defect.**
Le Matematiche, 69 (2014), n. 1, pp. 275 – 284.
4. **The dual geometry of Hermitian two-point codes** (with E. Ballico).
Discrete Mathematics, 313 (2013), n. 23, pp. 2687 – 2695.
3. **On the dual minimum distance and minimum weight of codes from a quotient of the Hermitian curve**
(with E. Ballico).
Applicable Algebra in Engineering, Communication and Computing, 24 (2013), n. 5, pp. 343 – 354.
2. **Projective normality of Artin-Schreier curves** (with E. Ballico).
Le Matematiche, 68 (2013), n. 2, pp. 91 – 98.
1. **On the duals of geometric Goppa codes from norm-trace curves** (with E. Ballico).
Finite Fields and Their Applications, 20 (2013), pp. 30 – 39.

THESES AND MONOGRAPHS

4. **Coding Theory** (lecture notes, available [here](#)).
Eindhoven University of Technology and Dutch MasterMath program.
3. **Properties and constructions of codes with the rank and the subspace metric.**
PhD thesis, University of Neuchâtel, Switzerland, 2016.

2. **On Goppa codes on the Hermitian curve.**
MSc thesis, University of Trento, Italy, 2012.
1. **Selected topics in algebraic geometry.**
BSc thesis, University of Trento, Italy, 2009.

RESEARCH TALKS

** means "invited talk"; planned talks are also included*

69. **TBD.** *
La Laguna University, Tenerife, Spain, Sept. 2022 (planned).
68. **Network decoding against restricted adversaries.**
Conference "Coding theory and cryptography – A conference in honor of Joachim Rosenthal's 60th birthday", Zurich, Switzerland, July 2022.
67. **Rank-metric codes.** *
Banff-Oaxaca conference "Algebraic Methods in Coding Theory and Communication", Mexico, June 2022.
66. **The density function of rank-metric codes.** *
Sabancı University, Turkey, Apr. 2022.
65. **The curious case of the diamond network.**
Conference "WCC 2021", University of Rostock, Germany, Mar. 2022.
64. **Structure of codes for the sum-rank metric.** *
Cleveland State University, USA, Oct. 2021.
63. **Structure and parameters of sum-rank-metric codes.** *
Mathematical Congress of the Americas, Buenos Aires, Argentina, July 2021.
62. **The typical code over a large alphabet.** *
Seminar series "Cryptography and Coding Theory", Italian Mathematical Society (UMI), June 2021.
61. **Common complements of linear subspaces and the density of optimal codes.** *
University of Kentucky, USA, Apr. 2021.
60. **The sparseness of MRD codes.** *
University of Zurich, Switzerland, Mar. 2021.
59. **Network coding and the rank metric.** *
Eindhoven University of Technology, Oct. 2020.
58. **Network coding, rank-metric codes, and rook theory.** *
University of Campania, Sept. 2020.
57. **Codes with the Hamming and the rank metric and two problems in combinatorics.** *
ACCESS seminar series, Sept. 2020.
56. **Network coding, rank metric codes, and rook theory.** *
University of South Florida, Tampa, USA, Dec. 2019.
55. **Network coding and the rank metric.** *
University of Osnabrück, Germany, Nov. 2019.
54. **Network coding and the combinatorics of codes.** *
University College Dublin, Ireland, Oct. 2019.
53. **Network coding and the combinatorics of codes.** *
Workshop "Commutative algebra meets combinatorics", Neuchâtel, Switzerland, July 2019.
52. **Matrix codes and rook theory.** *
Conference "SIAM AG19", Bern, Switzerland, July 2019.
51. **Network coding and the combinatorics of error-correcting codes.** *
Aarhus University, Aarhus, Denmark, June 2019.

50. **Network coding, rank-metric codes, and rook theory.** *
Mini-conference “ c_2 invariant meets rook theory”, Berlin, Germany, Apr. 2019.
49. **On the sparsity of MRD codes.**
Conference “WCC 2019”, Henri Lebesgue Center, France, Mar. 2019.
48. **Matrix codes and rook theory.** *
Conference “Contemporary Coding Theory”, Oberwolfach, Germany, Mar. 2019.
47. **Partitions of matrix spaces and q -rook polynomials.** *
University of Neuchâtel, Switzerland, Feb. 2019.
46. **Adversarial network coding.** *
University of Paris 8, Paris, France, Dec. 2018.
45. **The covering radius of rank-metric codes.** *
Conference “Coding Theory for Networks, Storage, and Security”, Dagstuhl, Germany, Dec. 2018.
44. **Network coding and the rank metric.** *
Workshop “Nonlinear Algebra in Applications”, ICERM, Providence, USA, Nov. 2018.
43. **Adversarial network coding.** *
University of Kentucky, Lexington, USA, Oct. 2018.
42. **Covering radius of rank-metric codes.** *
Conference “MTNS 2018”, Hong Kong, China, July 2018.
41. **Density problems in coding theory.**
University College Dublin, Ireland, May 2018.
40. **Adversarial network coding.** *
University of Neuchâtel, Switzerland, Feb. 2018.
39. **On the structure of equidistant subspace codes.** *
Workshop “Coding Theory and Cryptography”, Ghent University, Belgium, Dec. 2017.
38. **Les mathématiques et les communications numériques: Des satellites aux réseaux.** *
University of Neuchâtel, Switzerland, Dec. 2017.
37. **A mathematical framework for adversarial network communications.** *
University College Dublin, Ireland, Nov. 2017.
36. **Rank-metric codes of zero defect.**
Conference “SIAM AG17”, Atlanta, USA, Aug. 2017.
35. **Combinatorics and covering radius of rank-metric codes.** *
Conference “Mathematical Congress of the Americas”, Montréal, Canada, July 2017.
34. **An algebraic framework for physical-layer network coding.**
University of Neuchâtel, Switzerland, June 2017.
33. **An application of coding theory to enumerative combinatorics.** *
University of Toronto, Canada, May 2017.
32. **An algebraic framework for end-to-end physical-layer network coding.** *
University of Kentucky, Lexington, USA, Mar. 2017.
31. **Combinatorics of MacWilliams identities.** *
Clemson University, Clemson, USA, Jan. 2017.
30. **Equidistant subspace codes.** *
Conference “Joint Mathematics Meetings”, Atlanta, USA, Jan. 2017.
29. **Ferrers diagram codes and the Etzion-Silberstein conjecture.** *
University of Fribourg, Switzerland, Sept. 2016.
28. **Codes endowed with the rank metric.** *
University of Iași, Romania, Apr. 2016.
27. **Equidistant subspace codes.**
Conference “Network Coding and Designs”, Dubrovnik, Croatia, Apr. 2016.

26. **Weight distribution of rank-metric codes.** *
Conference "The First Colombian Workshop on Coding Theory", Barranquilla, Colombia, Nov. 2015.
25. **Generalized rank weights.**
Conference "DARNEC 2015", Istanbul Technical University, Turkey, Nov. 2015.
24. **Coding theory and combinatorics.** *
University of Fribourg, Switzerland, Nov. 2015.
23. **Combinatorics of MacWilliams identities.** *
University College Dublin, Ireland, Oct. 2015.
22. **Equidistant codes in network coding.**
Swiss Graduate Colloquium, Bern, Switzerland, Sept. 2015.
21. **Rank-metric codes: Duality and MacWilliams identities.**
Conference "SIAM AG15", Daejeon, South Korea, Aug. 2015.
20. **Delsarte codes and MacWilliams identities.**
Conference "7th Workshop on Coding and Systems", Salamanca, Spain, July 2015.
19. **Subspace codes from Ferrers diagrams.**
Conference "MEGA 2015 – Effective Methods in Algebraic Geometry", Trento, Italy, June 2015.
18. **Coding theory: Reliable communications over noisy channels.**
University of Neuchâtel, Switzerland, May 2015.
17. **Delsarte codes and their MacWilliams identities.**
University of Zurich, Switzerland, Mar. 2015.
16. **An application of coding theory to enumerative combinatorics.**
Swiss Graduate Colloquium, Lausanne, Switzerland, Feb. 2015.
15. **Rank-metric codes: duality and MacWilliams identities.** *
University of Montpellier, France, Jan. 2015.
14. **Duality of rank-metric codes.** *
Autonomous University of Barcelona, Spain, Dec. 2014.
13. **Subspace codes from Ferrers diagrams.**
Conference "4th Castle Meeting on Coding Theory and Applications", Palmela, Portugal, Sept. 2014.
12. **On the dual minimum-weight codewords of one-point Goppa codes.** *
Conference "MTNS 2014", Groningen, The Netherlands, July 2014.
11. **Error correction in random network coding.**
Swiss Graduate Colloquium, Geneva, Switzerland, Feb. 2014.
10. **Partial spreads in network coding.**
Conference "Random network codes and Designs over $GF(q)$ ", Ghent, Belgium, Sept. 2013.
9. **Coding and network coding.**
Swiss Graduate Colloquium, Fribourg, Switzerland, Sept. 2013.
8. **Partial spreads in network coding.** *
Conference "SIAM AG13", Colorado, USA, Aug. 2013.
7. **Network coding and algebraic curves.** *
COST conference on Network Coding, University of Zurich, Switzerland, June 2013.
6. **Partial spread codes.**
University of Neuchâtel, Switzerland, May 2013.
5. **On the parameters of binary systematic codes of small defect.**
Workshop "Algebra and Geometry", Bern, Switzerland, Sept. 2012.
4. **Goppa codes from the Hermitian curve and its quotients.** *
University of Basel, Switzerland, May 2012.
3. **Geometry in coding theory.** *
Workshop "BunnyTn 3", Trento, Italy, Mar. 2012.

2. **Introduction to noncommutative geometry.**

University of Trento, Italy, June 2011.

1. **Coxeter groups and affine geometry.**

University of Trento, Italy, Mar. 2009.

OUTREACH

- Held information sessions about STEM in Italian high schools, 2016 and 2018.
- Selected as a PhD student to present the teaching offering in Mathematics in the high schools of Neuchâtel and the neighbouring region.
- Participated as teacher in the preparation of high-school students to the Italian Math Olympiads, 2010.

PARTICIPATION TO INTERNATIONAL CONFERENCES (SELECTION)

** means "invited participation" and ** means "invitation-only event"; some planned events are also included*

- MTNS 2022, Bayreuth, Germany, Sept. 2022.
- Irsee meeting on "Finite Geometry". Irsee, Germany, Sept. 2022. **
- Conference "Algebraic Methods in Coding Theory and Communication". Banff-Oaxaca, Mexico, April 2022. **
- WCC 2022. University of Rostock, Germany, Mar. 2022.
- SIAM AG21 Conference on Applied Algebraic Geometry. Austin, Texas, USA, August 2021. *
- Mathematical Congress of the Americas. Buenos Aires, Argentina, July 2021 (online). *
- Conference "PQCrypto 2020". Paris, France, Sept. 2020 (online).
- Final workshop of the Manta Project (ANR France). Nogaro en Armagnac, France, Aug. 2019. **
- Workshop "Commutative algebra meets combinatorics". Neuchâtel, Switzerland, July. 2019. *
- SIAM AG19 Conference on Applied Algebraic Geometry. Bern, Switzerland, July 2019. *
- c_2 Invariant Meets Rook Theory. Humboldt University Berlin, Germany, Apr. 2019.
- WCC 2019. Henri Lebesgue Center, France, Mar. 2019.
- Contemporary Coding Theory. Oberwolfach, Germany, Mar. 2019. **
- Algebraic Coding Theory for Networks, Storage, and Security. Dagstuhl, Germany, Dec. 2018. **
- Nonlinear Algebra in Applications. ICERM (Brown University), Providence, USA, Nov. 2018. *
- MTNS 2018. Hong Kong, China, July 2018.
- SIAM AG17 Conference on Applied Algebraic Geometry. Atlanta, USA, Aug. 2017.
- Mathematical Congress of the Americas 2017. Montréal, Canada, July 2017. *
- Joint Mathematics Meetings. Atlanta, USA, Jan. 2017. *
- Coding Theory in the Time of Big Data. Dagstuhl, Germany, Aug. 2016. **
- The First Colombian Workshop on Coding Theory. Barranquilla, Colombia, Nov. 2015. *
- SIAM AG15 Conference on Applied Algebraic Geometry. Daejeon, South Korea, Aug. 2015.
- MEGA 2015 – Effective Methods in Algebraic Geometry. Trento, Italy, June 2015.
- 4th Castle Meeting on Coding Theory and Applications. Palmela, Portugal, Sept. 2014.
- MTNS 2014. Groningen, the Netherlands, July 2014. *
- Algebra, Codes and Networks. Bordeaux, France, June 2014.
- Congress on Privacy and Surveillance. EPFL, Lausanne, Switzerland, Sept. 2013.
- SIAM AG13 Conference on Applied Algebraic Geometry. Colorado, USA, Aug. 2013.
- Trends in Coding Theory. Centro Stefano Franscini, Ascona, Switzerland, Oct. 2012. **