Evelyne Hubert

Inria Senior Researcher

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Career

Institut National de Recherche en Informatique et Automatique, France (since 1999)
Research Scientist. *Directrice de Recherche* since 2017.

Isaac Newton Institute, Cambridge, UK (2019)
Simons fellow for the program *Geometry and structure preservation in computational differential equations*.

Fields Institute, Toronto, Canada (2015-2016)
Visiting fellow for the thematic program on *Computer Algebra*.

Institute for Mathematics and its Applications, Minneapolis, USA (2006-2007)
Fulbright fellow for the year long program *Applications of Algebraic Geometry*.

Mathematical Science Research Institute, Berkeley, USA (1998 - 1999)
MSRI postdoctoral fellow in the *Symbolic Computation in Geometry and Analysis* program.

University of Waterloo, Canada (1997 - 1998)
Postdoctoral fellow in the Symbolic Computation Group, jointly with the Maplesoft company.

Education

Université de Nice Sophia Antipolis (2012): *Habilitation à Diriger des Recherches en Sciences*.
Thesis : *Algebraic and Differential Invariants*.

Institut National Polytechnique de Grenoble (1997): *PhD in Applied Mathematics*.
Thesis : *Algebra and Algorithms for Singularities of Implicit Differential Equations*.

Imperial College, London, UK (1993): *Master of Sciences in Mathematics of the University of London*.
Thesis: *Algorithms for constructing stable manifolds of stationary solutions*.

Ecole Nationale Supérieure d'Informatique et de Mathématiques Appliquées de Grenoble (1993): *Diplôme d'ingénieur*.

Keynote lectures

2024: Tutorial lecturer at the ACM *International Symposium on Symbolic and Algebraic Computation*.
Preserving and Exploiting Symmetry in Algebraic Computation.

2021: Keynote speaker at the *Maple Conference*.
An Integral View on Dimensional Analysis: Scaling Invariants for Parameter Reductions in Dynamical Systems

2017: Plenary speaker at the symposium on *Orthogonal Polynomials, Special Function and Applications*.
Computing Symmetric Cubatures: A Moment Matrix Approach.

2011: Plenary speaker at the triennial conference *Foundations of Computational Mathematics*.
Algebraic and Differential Invariants.

2010: Plenary speaker at the ACM *International Symposium on Symbolic and Algebraic Computation*.
Algebraic Invariants and their Differential Algebras

2005: Tutorial lecturer at the ACM *International Symposium on Symbolic and Algebraic Computation*.
Differential Algebra and Triangulation-Decomposition Algorithms.

Selected publication

Orbit spaces of Weyl groups acting on compact tori: a unified and explicit polynomial description; with T. Metzlaff and C. Riener. SIAM Journal on Applied Algebra and Geometry (2024).

Sparse Interpolation in Terms of Multivariate Chebyshev Polynomials; with M. Singer. Foundations of Computational Mathematics (2022).

Algorithms for fundamental invariants and equivariants (of finite groups); with E. Rodriguez Bazan. Mathematics of Computation (2022)

Rational invariants of even ternary forms under the orthogonal group; with P. Goerlach and T. Papadopoulo. Foundations of Computational Mathematics (2019).

Scaffolding skeletons using spherical Voronoi diagrams: feasibility, regularity and symmetry; with A. Fuentes Suarez. Computer-Aided Design (2018).

Computation of the Invariants of Finite Abelian Groups; with G. Labahn. Mathematics of Computation (2016).

Scaling Invariants and Symmetry Reduction of Dynamical Systems; with G. Labahn. Foundations Computational Mathematics (2013).

Differential invariants of a Lie group action: syzygies on a generating set. Journal of Symbolic Computation (2009).

Smooth and Algebraic Invariants of a Group Action. Local and Global Constructions; with I. Kogan. Foundations Computational Mathematics (2007).

Rational Invariants of a Group Action. Construction and Rewriting; with I. Kogan. Journal of Symbolic Computation (2007).

Factorization free decomposition algorithms in differential algebra. Journal of Symbolic Computations (2000).

Research supervision

PhD theses

2022-2025: Martin Jalard, *Stratification of orbit space by isotropy: a constructive approach through equivariants*. Martin's defense is planned for June 30th, 2025.

2019-2022: Tobias Metzlaff, *Crystallographic Groups and Chebyshev Polynomials in Global Optimization*. Tobias is now a postdoc at TU Kaiserslautern with the *Algebra, Geometry and Computer Algebra* group.

2017-2020: Erick Rodriguez Bazan, *Fundamental equivariants and symmetry preservation in multivariate interpolation and H-bases*. Erick turned to industry and now works in a software company in Belgium.

2016-2019: Alvaro Fuentes Suarez, *Modeling shapes with skeletons: scaffolds and anisotropic convolution*. Alvaro chose to turn to industry and enjoy his job in a software company in Belgium.

2011-2015: Mathieu Collowald, *Multivariate moment problems : polytope reconstruction and symmetric cubatures*. Mathieu is now *Professeur agrégé*.

2002-2006: Nicolas Le Roux, *Formal solutions to partial differential equations*, co-supervised with M. Barkatou (Université de Limoges). Nicolas is now *Professeur agrégé*.

Master theses

2016: Paul Görlach, University of Bonn, *Rational Invariants of Even Ternary Forms Under the Orthogonal Group*. Paul then did his PhD with Bernd Sturmfels at the Max Planck Institute in Leipzig (Germany).

2000: Thomas Cluzeau, Université de Limoges, *Differential primitive element in the nonlinear case*. Thomas continued as a PhD student with Moulay Barkatou and Jacques-Arthur Weil, at Université de Limoges.

Postdoctoral fellows

2009-2010: Xingua Song, co-mentored with B. Mourrain, *Reconstruction of trees from laser scanner data*. Xingua went on to an engineer position at Magna PowerTrain (Austria).

2005-2006: Thomas Cluzeau, co-mentored with A. Quadrat, *Probabilistic algorithms for computing resolvent representations*. Thomas has been associate professor at Université de Limoges since.

Editorial boards

2017- : Associate editor of the journal *Foundations of Computational Mathematics*.

2007-2025: Associate editor of the *Journal of Symbolic Computation*.

2024: Co-editor for the special issue *Computational Algebra and Geometry: A special issue in memory and honor of Agnes Szanto* in the *Journal of Symbolic Computation*

2018: Co-editor for the collection *Research in Shape Analysis*, Springer, AWM Series, volume 12.

2013: Co-editor for the issue of *Foundations of Computational Mathematics* celebrating Peter Olver.

2013: Co-editor of the special issue *Effective Methods in Algebraic Geometry* in the *Journal of Symbolic Computation*.

Conference program and scientific committees

2025: Member of the scientific committee for the conference *Enumerative combinatorics and effective aspects of differential equations* at CIRM, Marseille.

2023: Member of the selection committee for the *Stephen Smale prize*.

2023, 20: Member of the selection committee for plenary speakers at *FoCM*, a triennial conference. [2020], [2023]

2023: Chair of the software presentation committee of the *International Symposium on Symbolic and Algebraic Computation* (ISSAC), a yearly ACM conference.

2023 : Co-organizer for the conference *Symmetry, Stability, and interactions with Computation* at CIRM, Marseille.

2020, 14, 08, 03: Member of the program committee of the *International Symposium on Symbolic and Algebraic Computation* (ISSAC), a yearly ACM conference.

2018: Scientific and organization leader for the conference *Symmetry and Computation* at CIRM, Marseille.

2017: Co-organizer of the first joint meeting of the London Mathematical Society and the Institute of Mathematics and its Application in London with the theme *Symmetry & Computation*.

2017: Co-organizer of the mini-symposium *Symmetry and Structure in Algebraic Computation* at the SIAM conference on *Applied Algebraic Geometry* at the Georgia Institute of Technology, USA.

2017, 15, 13, 11, 09, 07: Member of the scientific advisory board and program committee of the conference *MEGA (Effective Method in Algebraic Geometry)*. This is a selective biennial conference based in Europe.

2016: Co-organizer of the collaborative workshop *Women in Shape-2: Modeling Boundaries of Objects in 2- and 3-Dimensions* at the Nesin Mathematical Village, Turkey.

2014, 11, 08: Principal organizer of the workshop *Symbolic Analysis* at the triennial conference *Foundations of Computational Mathematics* in Hong Kong, Budapest and Montevideo.

2013: Co-organizer of the mini-symposium *Computational Aspects of the Moving Frame Methods* at the SIAM conference on [*Applied Algebraic Geometry* in Fort Collins, Colorado (2013).

2010: Member of the program committee of the *Differential Algebra and Related Topic* conference in Beijing.

2004: Member of the program committee of the *Conference on Polynomial System Solving*, in honor of D. Lazard.

Hiring committees

2025: Professor position in Mathematics at Université de Limoges

2024: Junior Research positions at Inria Université Côte d'Azur.

2022: Associate Professor position in Mathematics at Université de Limoges

2021: Junior Research positions at Inria-Saclay Ile de France.

2020: Professor position in Mathematics at Université Versaille Saint Quentin

2019, 18, 17: Junior Research positions at Inria-Nancy Grand Est.

2018: Senior Research positions at Inria.

2017, 16: Junior Research positions at Inria Rennes Bretagne Atlantique.

2010, 09: Agrégation de Mathématiques, jury de épreuve de Modélisation, spécialité Calcul Formel.

Leadership

2023-2026: Chair of the society *Foundations of Computational Mathematics*

Habilitations and PhDs

2023: Committee chair for the PhD of Subhayan Saha, Ecole Normale Supérieure de Lyon.
Absolute Reconstruction for Sums of Powers of Linear Forms.

2023: Reviewer and committee member for the PhD of Christina Katsamaki, Sorbonne Université.
Exact Algebraic and Geometric Computations for Parametric Curves.

2022: Reviewer and committee member for the Habilitation of Marc Pouget, Université de Lorraine.
Bivariate systems and topology of plane curves: algebraic and numerical methods.

2021: Examiner for the PhD of Zhangchi Chen, Université Paris-Saclay.
small *Differential invariants of parabolic surfaces and of CR hypersurfaces*.

2019: Reviewer for the Habilitation of Georg Regensburger, Johannes Kepler University, Austria.
Algebraic and algorithmic approaches to analysis: integro-differential equations, positive steady states, and wavelets.

2018: Examiner for the PhD of Timothée Pecatte, Ecole Normale Supérieure de Lyon.
Lower bounds and algorithms for the reconstruction of affine powers sums.

2016: Reviewer and committee member for the PhD of Louis Dumont, Université de Paris-Saclay.
`https://www.theses.fr/2016SACLX111`*Efficient algorithms for the symbolic computation of certain contour integrals with one parameter.*

2015: Examiner for the PhD of Romain Basson, Université de Rennes.
Arithmetic aspects of moduli spaces of genus 3 hyperelliptic curves in positive characteristic.

2015: Examiner for the PhD of Romain Casati, Université de Grenoble.
Contributions to the Numerical Modeling of Thin Structures for Computer Graphics.

2013: Examiner for the PhD of Cédric Zanni, Université de Grenoble.
Skeleton-based Implicit Modeling & Applications.

2013: Committee member for the PhD of Jules Svartz, Université de Pierre & Marie Curie.
Polynomial Systems with Symmetry: Algorithms, Complexity, Applications.

2013: Examiner for the PhD of Christine Jost, University of Stockholm.
Topics in Computational Algebraic Geometry and Deformation Quantization.

2006: Reviewer for the PhD thesis of Elisabeth D'Alfonso, Universidad de Buenos Aires.
Symbolic Methods for Differential Algebraic Equation Systems.

2005: Examiner for the PhD of Min Wu, Chinese Academy of Sciences, Beijing.
On Solutions of Linear Functional Systems and Factorization of Modules over Laurent-Ore Algebras.

Scientific event organization

2021: Co-organizer of the *FoCM online seminar series*

2017: Local co-organizer of the conference Effective Method in Algebraic Geometry.

2006: Co-organizer of the *Conference* Café*, in memory of Manuel Bronstein* at Inria Sophia Antipolis.

2004: Scientific and organization chair of the *Forum des Jeunes Mathématiciennes. Mathématiques, Informatique et Sciences du Vivant*. Part of a biennial conference series aimed at gathering junior and senior female mathematicians.

2002-06: Founding chair of the *Seminaires Croisés* at Inria Sophia Antipolis. A series of workshops gathering several teams of the institute around talks given by doctoral students.

2000-02: Organizer of regular cross-team seminars and lecture series at Inria Sophia Antipolis. The project-teams involved were Café, Saga/Galaad and Apics.

National and European projects

2024-2028 HORIZON-MSCA-2023 TENORS: Tensor Modeling, Geometry and Optimisation.

2019-2023 H2020-MSCA-ITN POEMA: Polynomial Optimization, Efficiency through Moments and Algebra.

2016-20: H2020-MSCA-ITN ARCADE: Algebraic Representations for Computer-Aided Design of Complex Shapes.

2011-15 ANR GEOLMI: Géométrie et algèbre des inégalités matricielles linéaires.

2010-12 ARC and Agropolis project PlantScan3D, an interdisciplinary collaboration between Inria and INRA.

Bilateral collaborations

2012-13: PHC Tournesol: Extracting Multidimensional Shapes: cubature rules and Padé approximants. Principal Investigator with Annie Cuyt, University of Antwerp.

2005: Inria-DREI actions with the USA: Algebra and algorithms in the moving frame method. A collaboration with Peter Olver, University of Minnesota.

2004-05: PAI Amadeus: Gröbner bases for operator algebras. A collaboration between the project-team Café and the Research Institute in Symbolic Computation, Hagenberg Austria.

2001-2002: France-Canada Research Fund Project: Comparison and Extension of Two Approaches for Computer Handling of Differential System. Principal Investigator, with Greg Reid, University of Western Ontario.

2001-02: Programme de Recherches Avancées franco-chinois de l'AFCRST: Efficient algorithms for Ore polynomials. A collaboration with the laboratory of Mathematics Mechanization at the Academia Sinica, Beijing.

2001-02: PAI Alliance: Moving Frames and Differential Systems. Principal Investigator with Elizabeth Mansfield, University of Kent.

Visiting Positions

2024: Isaac Newton Institute in Cambridge, UK: visiting fellow during the program *New equivariant methods in algebraic and differential geometry*.

2019: Isaac Newton Institute in Cambridge, UK: Simons fellow during the program *Geometry, compatibility and structure preservation in computational differential equations*.

2019: Arctic University of Norway: Tromso Research Foundation guest Professor in the department of Mathematics

2018: Institute for Computational and Experimental Research in Mathematics: a two month invitation during the program *Nonlinear Algebra*.

2016: University of Waterloo, Canada: an invitation from George Labahn for a two months visit.

2015: Fields Institute in Toronto: a four month position for the program *Computer Algebra*.

2014: Institute for Mathematical Sciences in Singapore: a one month invitation during the program *Inverse Moment Problems*

2010,13: La Trobe University, Melbourne, Australia : invitations for two one month visits from Peter van der Kamp.

2003: Mathematical Science Research Institute in Berkeley (2003): a one month invitation during the program *Computational Commutative Algebra*.

2002: Yale University, New Haven, USA : an invitation from Irina Kogan, turned into a successful collaboration.

International journals

[1] E. Hubert, T. Metzlaff, and C. Riener. Orbit spaces of Weyl groups acting on compact tori: A unified and explicit polynomial description. *SIAM Journal on Applied Algebra and Geometry*, 8(3):612–649, 2024. https://doi.org/10.1137/23M158173X.

[2] E. Hubert, T. Metzlaff, P. Moustrou, and C. Riener. Optimization of trigonometric polynomials with crystallographic symmetry and spectral bounds for set avoiding graphs. *Mathematical Programming*, 2024. https://doi.org/10.1007/s10107-024-02149-1.

[3] E. Rodriguez Bazan and E. Hubert. Symmetry in multivariate ideal interpolation. *Journal of Symbolic Computation*, 115:174–200, 2023. https://doi.org/10.1016/j.jsc.2022.08.014.

[4] E. Hubert and M. Singer. Sparse interpolation in terms of multivariate Chebyshev polynomials. *Foundations of Computational Mathematics*, 22:1801–1862, 2022. https://doi.org/10.1007/s10208-021-09535-7.

[5] E. Hubert and E. Rodriguez Bazan. Algorithms for fundamental invariants and equivariants. *Mathematics of Computation*, 91(337):2459–2488, 2022. https://doi.org/10.1090/mcom/3749.

[6] E. Rodriguez Bazan and E. Hubert. Multivariate interpolation: Preserving and exploiting symmetry. *Journal of Symbolic Computation*, 107:1–22, 2021. https://doi.org/10.1016/j.jsc.2021.01.004.

[7] E. Hubert. Invariant algebraic sets and symmetrization of polynomial systems. *Journal of Symbolic Computation*, 95:53–67, 2019. https://doi.org/10.1016/j.jsc.2018.09.002.

[8] P. Görlach, E. Hubert, and T. Papadopoulo. Rational invariants of even ternary forms under the orthogonal group. *Foundations of Computational Mathematics*, 19:1315–1361, 2019. https://doi.org/10.1007/s10208-018-9404-1.

[9] A. Fuentes Suárez, E. Hubert, and C. Zanni. Anisotropic convolution surfaces. *Computers and Graphics*, 82:106–116, 2019. https://doi.org/10.1016/j.cag.2019.05.018.

[10] A. Fuentes Suárez and E. Hubert. Scaffolding skeletons using spherical Voronoi diagrams: feasibility, regularity and symmetry. *Computer Aided Design*, 102:83–93, 2018. https://doi.org/10.1016/j.cad.2018.04.016.

[11] M. Collowald and E. Hubert. Algorithms for computing cubatures based on moment theory. *Studies in Applied Mathematics*, 141(4):501–546, 2018. https://doi.org/10.1111/sapm.12240.

[12] E. Hubert and G. Labahn. Computation of the invariants of finite abelian groups. *Mathematics of Computations*, 85(302):3029–3050, 2016. https://doi.org/10.1090/mcom/3076.

[13] M. Collowald, A. Cuyt, E. Hubert, W.-S. Lee, and O. Salazar Celis. Numerical reconstruction of convex polytopes from directional moments. *Advances in Computational Mathematics*, 41(6):1079–1099, 2015. http://doi.org/10.1007/s10444-014-9401-0.

[14] E. Musso and E. Hubert. Lagrangian curves in a 4-dimensional affine symplectic space. *Acta Applicandae Mathematicae*, 134(1):133–160, 2014. http://doi.org/10.1007/s10440-014-9874-3.

[15] E. Hubert and G. Labahn. Scaling invariants and symmetry reduction of dynamical systems. *Foundations of Computational Mathematics*, 13(4):479–516, 2013. https://doi.org/10.1007/s10208-013-9165-9.

[16] E. Hubert and M.-P. Cani. Convolution Surfaces based on Polygonal Curve Skeletons. (An Application of Symbolic Integration to Graphics). *Journal of Symbolic Computation*, 47(6):680–699, 2012. https://doi.org/10.1016/j.jsc.2011.12.026.

[17] E. Hubert. Convolution surfaces based on polygons for infinite and compact support kernels. *Graphical Models*, 74(1):1–13, 2012. http://doi.org/10.1016/j.gmod.2011.07.001.

[18] E. Hubert. Differential invariants of a Lie group action: syzygies on a generating set. *Journal of Symbolic Computation*, 44(3):382–416, 2009. https://doi.org/10.1016/j.jsc.2008.08.003.

[19] T. Cluzeau and E. Hubert. Probablistic algorithms for computing resolvent representations for regular differential ideals. *Applicable Algebra in Engineering Communication and Computing*, 19(5):365–392, 2008. https://doi.org/10.1007/s00200-008-0079-8.

[20] E. Hubert and I. Kogan. Smooth and algebraic invariants of a group action: local and global constructions. *Foundations of Computational Mathematics*, 7(4):455–493, 2007. https://doi.org/10.1007/s10208-006-0219-0.

[21] E. Hubert and I. Kogan. Rational invariants of a group action. Construction and rewriting. *Journal of Symbolic Computation special issue: Effective Methods in Algebraic Geometry (MEGA 05)* , 42(1-2):203–217, 2007. https://doi.org/10.1016/j.jsc.2006.03.005.

[22] E. Hubert. Differential algebra for derivations with nontrivial commutation rules. *Journal of Pure and Applied Algebra*, 200(1-2):163–190, 2005. https://doi.org/10.1016/j.jpaa.2004.12.034.

[23] T. Cluzeau and E. Hubert. Resolvent representation for regular differential ideals. *Applicable Algebra in Engineering, Communication and Computing*, 13(5):395–425, 2003. https://doi.org/10.1007/s00200-002-0110-4.

[24] E. Hubert. Factorization-free decomposition algorithms in differential algebra. *Journal Symbolic Computation special issue: Symbolic computation in algebra, analysis, and geometry (Berkeley, CA, 1998)* , 29(4-5):641–662, 2000. http://doi.org/10.1006/jsco.1999.0344.

[25] G. Moore and E. Hubert. Algorithms for constructing stable manifolds of stationary solutions. *IMA Journal of Numerical Analysis*, 19(3):375–424, 1999. https://doi.org/10.1093/imanum/19.3.375.

[26] A. Kapaev and E. Hubert. A note on the Lax pairs for Painlevé equations. *Journal of Physics. A. Mathematical and General*, 32(46), 1999. https//doi.org/10.1088/0305-4470/32/46/311.

[27] E. Hubert. Essential components of an algebraic differential equation. *Journal of Symbolic Computation*, 28(4-5):657–680, 1999. https://doi.org/10.1006/jsco.1999.0319.

[28] E. Hubert. Detecting degenerate behaviors in first order algebraic differential equations. *Theoretical Computer Science*, 187:7–25, 1997. https://doi.org/10.1016/S0304-3975(97)00054-6.

Reviewed international conferences

[29] E. Rodriguez Bazan and E. Hubert. Ideal interpolation, H-bases and symmetry. In *ISSAC'20—Proceedings of the ACM International Symposium on Symbolic and Algebraic Computation*, pages 402–409. ACM, 2020. https://doi.org/10.1145/3373207.3404057.

[30] E. Rodriguez Bazan and E. Hubert. Symmetry preserving interpolation. In *ISSAC'19—Proceedings of the ACM International Symposium on Symbolic and Algebraic Computation*, pages 34–41. ACM, 2019. https://doi.org/10.1145/3326229.3326247.

[31] A. Panotopoulou, E. Ross, K. Welker, E. Hubert, and G. Morin. Scaffolding a skeleton. In *Research in shape analysis*, volume 12 of *AWM Series*, pages 17–35. Springer, 2018. https://doi.org/10.1007/978-3-319-77066-6_2.

[32] A. Fuentes Suárez and E. Hubert. Convolution surfaces with varying radius: formulae for skeletons made of arcs of circles and line segments. In *Research in shape analysis*, volume 12 of *AWM Series*, pages 37–60. Springer, 2018. https://doi.org/10.1007/978-3-319-77066-6_3.

[33] A. J. Fuentes Suárez and E. Hubert. Scaffolding skeletons using spherical Voronoi diagrams. In *LAGOS'17—IX Latin and American Algorithms, Graphs and Optimization*, volume 62 of *Electron. Notes Discrete Math.*, pages 45–50. Elsevier, 2017. https://doi.org/10.1016/j.endm.2017.10.009.

[34] L. Larsson, G. Morin, A. Begault, R. Chaine, J. Abiva, E. Hubert, M. Hurdal, M. Li, B. Paniagua, G. Tran, and Cani M.-P. Identifying perceptually salient features on 2d shapes. In K. Leonard and S. Tari, editors, *Research in Shape Modeling*, volume 1 of *AWM Series*. Springer, 2015. https://doi.org/10.1007/978-3-319-16348-2_9.

[35] E. Hubert and G. Labahn. Rational invariants of scalings from Hermite normal forms. In *ISSAC'12—Proceedings of the ACM International Symposium on Symbolic and Algebraic Computation*, pages 219–226. ACM, 2012. https://doi.org/10.1145/2442829.2442862.

[36] C. Zanni, E. Hubert, and M.-P. Cani. Warp-based helical implicit primitives. *Computers & Graphics*, 35(3):517 – 523, 2011. https://doi.org/10.1016/j.cag.2011.03.027.

[37] E. Hubert and P. Olver. Differential invariants of conformal and projective surfaces. *Symmetry Integrability and Geometry: Methods and Applications*, 3(097), 2007. https://doi.org/10.3842/SIGMA.2007.097.

[38] E. Hubert. Improvements to a triangulation-decomposition algorithm for ordinary differential systems in higher degree cases. In *ISSAC'04—Proceedings of the ACM International Symposium on Symbolic and Algebraic Computation*, pages 191–198. ACM, 2004. https://doi.org/10.1145/1005285.1005314.

[39] E. Hubert and N. Le Roux. Computing power series solutions of a nonlinear pde system. In *ISSAC'03—Proceedings of the ACM International Symposium on Symbolic and Algebraic Computation*, pages 148–155. ACM, 2003. https://doi.org/10.1145/860854.860891.

[40] E. Hubert. The general solution of an ordinary differential equation. In *ISSAC'96—Proceedings of the **ACM International Symposium on Symbolic and Algebraic Computation***, pages 189–195. ACM, 1996. https://doi.org/10.1145/236869.237073.

Book Chapters

[41] E. Hubert. Rational Invariants of a Group Action. In P. Boito, G. Chèze, C. Pernet, and M. Safey El Din, editors, *Journees Nationales de Calcul Formel*, volume 3 of *Les cours du CIRM*, CEDRAM - Center for Diffusion of Academic Mathematical Journals, 2013. https://doi.org/10.5802/ccirm.19.

[42] E. Hubert. Algebraic and differential invariants. In F. Cucker, T. Krick, A. Pinkus, and A. Szanto, editors, *Foundations of computational mathematics, Budapest 2011*, number 403 in London Mathematical Society Lecture Note Series, pages 168–190. Cambrige University Press, 2012. https://doi.org/10.1017/CBO9781139095402.009.

[43] E. Hubert. Notes on triangular sets and triangulation-decomposition algorithms II: Differential systems. In F. Winkler and U. Langer, editors, *Symbolic and Numerical Scientific Computing*, number 2630 in Lecture Notes in Computer Science, pages 40–87. Springer Verlag Heidelberg, 2003. https://doi.org/10.1007/3-540-45084-X_2.

[44] E. Hubert. Notes on triangular sets and triangulation-decomposition algorithms I: Polynomial systems. In F. Winkler and U. Langer, editors, *Symbolic and Numerical Scientific Computing*, number 2630 in Lecture Notes in Computer Science, pages 1–39. Springer Verlag Heidelberg, 2003. https://doi.org/10.1007/3-540-45084-X_1.

Research reports and publications under review

[45] E. Hubert and M. Jalard. Separation and stratification by orbit type of the piezoelectric tensor. https://hal.science/hal-04905290, 2025.

[46] E. Hubert and M. Jalard. Rationality of the invariant field for a class of representations of the real orthogonal groups. https://hal.science/hal-04764527, 2024.

[47] E. Hubert and M. Jalard. Algebraically independent generators for the invariant field of SO_3 and O_3 representations $R^3 \oplus H$. https://inria.hal.science/hal-04604969, 2024.

[48] M. Collowald and E. Hubert. A moment matrix approach to computing symmetric cubatures. https://hal.inria.fr/hal-01188290, 2015.

[49] E. Hubert. Generation properties of Maurer-Cartan invariants. http://hal.inria.fr/inria-00194528, 2007.

Conference presentations & posters

[50] E. Hubert and P. van der Kamp. Integrability of geometric flows of curves in the plane. 2013.

Invited Talks

2024: *International Symposium on Symbolic and Algebraic Computation, Raleigh USA.* [3, 5, 6]
2024: *Algebraic combinatorics and finite groups*, Cetraro Italy. [5]
2024: *Singular and Oscillatory Integration*, London UK. [48]
2024: *Applied and computational algebraic geometry* in the program *New equivariant methods in algebraic and differential geometry* at the Isaac Newton Institute, Cambridge UK. [5]
2023: *Equations Fonctionnelles et Interactions*, Rennes. [1, 2]
2023: *Symbolic Analysis* at the conference *Foundations of Computational Mathematics*, Paris. [5]
2023: *Computational Algebraic Geometry* at the conference *Foundations of ComputationalMathematics*, Paris. [3, 6]
2023: *Random Algebraic Geometry*, BIRS Banff Canada. [1]
2023: *New Directions in Real Algebraic Geometry*, Oberwolfach Germany. [1, 2]
2022: *Solving Polynomial System* at CWI, Amsterdam Netherlands. [5]
2022: *Algebraic combinatorics of the symmetric groups and Coxeter groups*, Cetraro Italy. [1]
2022: *Géométrie Différentielle et Mécanique*, Bordeaux. [5]
2022: *Interpolation, Approximation, and Algebra*, Oberwolfach Germany. [4]
2021: *Group Actions, Invariants and Applications* at BIRS, Banff Canada. [8, 15, 21]
2021: *Maple Conference*, online. [15]
2021: *Algebraic combinatorics of the symmetric groups and Coxeter groups*, Cetraro Italy. [4]
2020: *Géométrie Différentielle et Mécanique*, Paris (eventually held online). [8, 15, 21]
2020: *Symmetry, Randomness, and Computations in Real Algebraic Geometry* at the Institute for Computational and Experimental Mathematics, Providence USA (eventually held online). [4]
2019: *Geometry, compatibility and structure preservation in computational differential equations* at the Isaac Newton Institute, Cambridge UK. [6]
2019: *Arctic Applied Algebra* at the Arctic University in Tromsö, Norway. [7]
2019: *Equations Fonctionnelles et Interactions* Anglet Fance. [18, 20, 21, 22], [42]
2019: *A celebration of Symmetry and Computation* at University of Kent, UK. [8, 15, 21]
2018: *Nonlinear Algebra in Applications* at the Institute for Computational and Experimental Mathematics, Providence USA. [8]
2018: *Séminaire Différentiel* at the Université de Versailles-St Quentin. [4]
2018: *Algebraic and geometric aspects of numerical methods for differential equations* at the Mittag-Leffler insitute, Stockholm Sweden. [11], [48]
2018: *Symmetry & Computations* at Centre International de Recherche en Mathématiques, Marseille, France. [8]
2017: First joint meeting of the London Mathematical Society and the Institute of Mathematics and its Applications, London UK. [8]
2017: *Orthogonal Polynomials, Special Functions and Applications*, Canterbury UK. [11], [48]
2017: *Resultants, Subresultants and Applications* at the SIAM conference *Applied Algebraic Geometry*, Atlanta USA. [4]
2017: *Symmetry & Structure in Algebraic Computation* at the SIAM conference *Applied Algebraic Geometry*, Atlanta USA. [11], [48].
2017: *Identifiability of Biological and Statistical Models* at the SIAM conference *Applied Algebraic Geometry*, Atlanta USA. [15].
2017: *Symbolic Analysis* at the conference *Foundations of Computational Mathematics*, Barcelona Spain. [4]
2017: Journées Nationales du GDR Informatique Mathématiques, Montpellier. [11], [48]
2017: Mathematics Colloquium, University of Kent, UK. [8]
2017: Applied Algebra and Geometry at University of Nottingham, UK. [8]
2016: *Sparse Interpolation, Rational Approximation and Exponential Analysis*, BIRS for Mathematical Innovation and Discovery, Oaxaca Mexico. [11], [48]
2016: *Symmetry, Invariants, Reduction*, Aachen Germany. [11], [48]
2016: *Algebraic Vision* at the *American Institute of Mathematics*, San Jose USA.
2016: *Computational Mathematics Colloquium*, University of Waterloo, Canada. [11], [48]
2015: *Applied Mathematics Colloquium*, University of Western Ontario, London Canada. [11], [48]
2015: *Symbolic Combinatorics and Computational Differential Algebra* at the Fields Institute, Toronto Canada. [11], [48]
2015: *Sparse Modelling and Multi-exponential Analysis*, Dagstuhl Germany. [11], [48]
2015: Seminar of the Aalto Science Institute, Finland. [15]
2014: *Symbolic Analysis* at the conference *Foundations of Computational Mathematics*, Montevideo Uruguay. [7]
2014: *Algebraic and analytic aspects of ordinary differential equations*, Aachen Germany. [12, 15].
2014: *Women in Math* seminar series and *Oberseminar Reelle Geometrie und Algebra*, Konstanz Germany. [16, 17], [7]
2014: *Colloquium of the Research Institute for Symbolic Computation*, Hagenberg Austria. [15], [35]
2014: *Functional Equations in Limoges*. [50]
2014: *Polyhedra, Lattices, Algebra, and Moments* at the Institute of Mathematical Sciences, Singapore. [21], [35]
2013: *Computational Aspects of Moving Frames* at the SIAM conference on *Applied Algebraic Geometry*, Fort Collins USA. [50]
2013: *Women in Shape (WiSh): Modeling Boundaries of Objects* at the *Institute for Pure & Applied Mathematics*, Los Angeles USA. [34]
2013: *Journées Nationales de Calcul Formel*, Centre International de Rencontres en Mathématiques, Marseille France. [41]
2012: *Symmetries of Differential Equations: Frames, Invariants and Applications in honor of the 60th birthday of Peter Olver*, Minneapolis USA. [15]
2012: *Geometry seminar*, Politecnico di Torino, Italy. [17, 16]
2011: *Foundations of Computational Mathematics*, Budapest Hungary. [15, 18, 20, 21, 22], [37], [42],[49]
2010: *International Symposium on Symbolic and Algebraic Computation*, Munich Germany. [18, 20, 21, 22].
2010: *Encuentro de Algebra Computacional y Aplicaciones*, Santiago de Compostella Spain. [16, 17]
2010: *Harmony of Gröbner Bases and the Modern Industrial Society*, Osaka Japan. [18]
2010: *Geometric flows, moving frames and integrable systems*, AMS meeting St Paul USA. [37], [49]
2009: *Discrete Systems and Special Functions* at the Newton Institute, Cambridge UK. [18], [37], [49]
2009: *Mathematics Mechanization in honor of W. T. Wu 90th birthday*, Beijing China. [18, 20, 21, 22]
2008: *Differential Algebra and Related Topics*, Newark USA. [18, 20, 21, 22]
2008: *Differential Algebra and Related Computer Algebra*, Catania Italy. [18, 20, 21, 22]
2007: *East Coast Computer Algebra Day*, Chesterton USA. [22]
2007: *Algebraic Geometry and Applications*, IMA, Minneapolis USA. [20, 21]
2006: *Software for Algebraic Geometry* at the IMA, Minneapolis USA. [43]
2006: *Global Integrability of Field Theories*, Daresbury UK (2006). [22], [43]
2006: *Symmetries and Overdetermined Systems of Partial Differential Equations* at the IMA, Minneapolis USA. [20, 21]
2006: *Gröbner Bases in Symbolic Analysis*, Hagenberg Austria. [21]
2005: *Challenges in Linear and Polynomial Algebra in Symbolic Computation Software*, Banff Canada. [21]
2005: *International Symposium on Symbolic and Algebraic Computation*, Beijing China. [24, 27], [39], [43, 44]
2005: *Symbolic Analysis* in the conference *Foundation of Computational Mathematics*, Santander Spain. [20, 21]
2004: *AARMS Workshop on Symbolic Computation*, Halifax Canada. [43, 44]
2004: *Applications of Invariant Theory to Differential Geometry* at the *Canadian Mathematical Society meeting*, Halifax Canada. [22]
2004: *Differential Algebra and Symbolic Computation*, Raleigh USA. [22]
2004: *Colloquium of the Research Institute for Symbolic Computation*, Hagenberg Austria. [22]
2003: *Systems of polynomial equations*, Buenos Aires Argentina. [22]
2002: *Symbolic Analysis* in the conference *Foundation of Computational Mathematics*, Minneapolis USA. [19, 23]
2001: *Symbolic and Numeric Computation*, Hagenberg Austria. [24], [43, 44]