

CURRICULUM VITAE

CHARDIN Marc

born 07/03/61 in Paris, France.

French, married, 3 children.

Address : Institut de Mathématiques de Jussieu, Université Pierre et Marie Curie, 4, place Jussieu, Paris 5^o, France.

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Degrees :

- Master in Pure Mathematics, 1983, Université Pierre et Marie Curie.
- Ph. D. at Université Pierre et Marie Curie, 1990.
- Habilitation at Université Pierre et Marie Curie, 2006.

Appointments :

- Research fellow in the group “Problèmes Diophantiens” at Université Pierre et Marie Curie in 1986-87.
- Research fellow at “Centre de Mathématiques de l’École polytechnique” in 1987-88, 1988-89 and 1989-90.
- Chargé de recherche au CNRS, at “Centre de Mathématiques de l’École polytechnique” (URA 169) from octobre 1990 to december 1996.
- Permanent faculty of the “Institut de Mathématiques de Jussieu”, as a CNRS researcher, since january 1997.

Visits (at least a month) :

- MSRI, October 1998, “Symbolic Computation in Geometry and Analysis” semester.
- Michigan State University, may-october 2000, collaboration with Bernd Ulrich.
- MSRI, November 2002, “Commutative Algebra” year.

Teaching :

- Military service, as a professor, 1984-85.
- Assistant professor at Université Catholique de l'Ouest in 1985-86 and 1986-87.
- Assistant professor at Université Pierre et Marie Curie (Paris VI), in 1986-87, 1987-88 and 1988-89.
- ATER (assistant professor) at Université Pierre et Marie Curie (Paris VI) in 1989-90.
- Assistant professor at ENSTA in 1991-92, 1992-93 and 1993-94.
- Graduate course in 1993 (DEA, Paris 6).
- Two graduate courses in 1998 (DEA, Paris 6).
- Graduate course in 2000 (DEA, University of Nice).

Invited lectures (international conferences, since 2000) :

1. Joint meeting AMS-SIAM, Washington DC, february 2000.
2. Algèbre commutative et géométrie algébrique, Grenoble, june 2001.
3. Fourth ALGA meeting, Angra dos Reis (Brésil), august 2001.
4. EACA 2001, Ezcaray (Espagne), september 2001.
5. AMS-UMI first joint meeting, Pisa, june 2002.
6. Scola de Algebra, Cabo Frio (Brazil), august 2002.
7. Fifth ALGA meeting in honor of S. Kleiman and A. Simis, Rio de Janeiro, august 2002.
8. Workshop on Commutative Algebra, Singularities and Computer Algebra, Sinaia (Romania), september 2002.
9. RSME-AMS first joint meeting, Seville, juin 2003.
10. International Conference on Commutative Algebra and Combinatorics, Allahabad (India), december 2003.
11. India-AMS first joint meeting, Bangalore, december 2003.
12. Commutative Algebra and Interactions with Algebraic Geometry and Combinatorics, Trieste, june 2004.
13. Combinatorial Commutative Algebra, Oberwolfach, july 2004.
14. Commutative Algebra: Homological and Birational Theory, Banff, september 2004.
15. Algebraic Geometry and Geometric Modeling, Nice, september 2004.
16. Kommutative Algebra, Oberwolfach, april 2005.
17. DMV-AMS-OMV first joint meeting, Mainz, june 2005.
18. MAGIC 05, University of Notre Dame, october 2005.
19. Commutative Algebra conference honoring the contributions of Winfried Bruns, Osnabrück, june 2006.

20. EACA 2006, Seville (Espagne), september 2006.
21. BIRS conference on Syzygies and Hilbert Functions, Banff, october 2006.
22. BIRS conference on Commutative Algebra and its Interaction with Algebraic Geometry, june 2007.
23. Hilbert Functions and Syzygies in Commutative Algebra and Combinatorics, Cortona, september 2007.
24. New Tools in Surface Modeling, Oberwolfach, november 2007.
25. Conference on Commutative, Combinatorial, and Computational Algebra in Memory of Pilar Pisón-Casares. Séville, February 2008.
26. Kommutative Algebra, Oberwolfach, april 2009.
27. Workshop on Syzygies of Projective Varieties, Saga (Japon), september 2009.
28. Local Rings and Local Study of Algebraic Varieties, ICTP Trieste, june 2010.
29. Midwest Commutative Algebra and Geometry Conference, Purdue, may 2011.
30. Combinatorial Methods in Algebraic Geometry and Commutative Algebra, MPI Leipzig, july 2011.

Organization of international conferences :

1. Differential algebra and singularities (CIRM, Marseille, 1993, with F. Ollivier)
2. Elimination theory (CIRM, Marseille, 1994)
3. Algebraic and analytic theory of residues and its applications (IHP, Paris, 1995, with B. Mourrain)
4. Commutative algebra and experimentation in algebraic geometry (CIRM, Marseille, 1996, with D. Eisenbud)
5. Commutative algebra and algebraic geometry (CIRM, Marseille, 1997, with H. Flenner, C. Huneke and J.-P. Jouanolou)
6. Commutative algebra and its interactions with algebraic geometry (CIRM, Marseille, 2000, with B. Ulrich and G. Valla)
7. Commutative algebra and its interactions with algebraic geometry (AMS-SMF, Lyon, 2001, with C. Polini)
8. Commutative algebra and its interactions with algebraic geometry (CIRM, Marseille, 2003, with W. Bruns and B. Ulrich)
9. Commutative algebra in Hanoi (with D. Eisenbud, L. T. Hoa, and N. V. Trung), January 2006.
10. Castelnuovo-Mumford regularity and related topics (CIRM, may 2006, with I. Bermejo)
11. Elimination theory, in honor of Jean-Pierre Jouanolou (CIRM, may 2006, with L. Busé).
12. Commutative algebra and its interactions with algebraic geometry (CIRM, may 2006, with W. Bruns and B. Ulrich).

13. Commutative algebra in Mumbai (with L. Avramov and J. Verma), January 2008.
14. Commutative Algebra: Connections with Algebraic Topology and Representation Theory. A conference on the occasion of Luchezar Avramov's 60th birthday. (Univ. Nebraska, may 2008, with L. Christensen, S. Iyengar, R. & S. Wiegand).
15. Commutative algebra and its interactions with algebraic geometry (CIRM, september 2008, with W. Bruns and B. Ulrich).
16. PASI conference on Commutative Algebra and its connections to Geometry, Recife (with B. Ulrich, A. Simis *et al.*), August 2009.
17. Commutative Algebra and Applications to Combinatorics and Algebraic Geometry (Université de Galatasaray, September 2010, with S. Yassemi, M. Tosun *et al.*).
18. Commutative algebra and its interactions with algebraic geometry (CIRM, Marseille, November 2010, with W. Bruns and B. Ulrich).

Organization of international schools :

1. CIMPA school on Gröbner bases and their applications, Zanjan (Iran), july 2005.
2. CIMPA school on commutative algebra, Hanoi, december 2005–january 2006.
3. CIMPA school on commutative algebra, Mumbai, january 2008.
4. CIMPA school on commutative algebra, Teheran, june 2009.
5. PASI school and conference on Commutative Algebra and its connections to Geometry, Recife (Brazil), august 2009.
6. CIMPA school on commutative algebra, Istanbul, September 2010 (reschedule of the school planned in Tehran for June 2009, that was cancelled three days before it should have begin, on the recommendation of the French embassy in Tehran).

Organization of seminars :

- Aleph et géode (computational commutative algebra), 1992-1995 at École polytechnique.
- Residues 1994-95 at Institut Henri Poincaré.
- Intersection theory, 1995-96 and 1996-1997 at Institut Henri Poincaré.
- Vanishing theorems, 1999-2000 at U. Paris 6.

Thesis direction :

- Najib Ouled Azaiez was my PhD student for 2 years. He continued with Don Zagier at Collège de France, with who he defended his thesis.
- Amadou Lamine Fall defended his PhD thesis in September 2008.
- Hamid Hassanzadeh defended his PhD thesis in June 2009.

- Nicolás Botbol defended his PhD thesis in September 2010.
- Amir Bagheri is my PhD student (in cooperation with Pr. Siamak Yassemi) since 2010.
- Kamran Lamei is my PhD student since September 2010.

Publications :

- [1] MARC CHARDIN, *Une majoration de la fonction de Hilbert et ses conséquences pour l'interpolation algébrique*, Bull. Soc. Math. France, **117**, 305–318 (1989).
- [2] MARC CHARDIN, *Lien entre deux résultats sur la répartition modulo 1 de la suite des multiples d'un nombre réel*, C. R. Acad. Sci. Paris, **308**, Série I, 519–520 (1989).
- [3] MARC CHARDIN, *Un algorithme pour le calcul du résultant de trois polynômes homogènes en trois variables*, Effective Methods in Algebraic Geometry (Actes de MEGA 90), Progress in Math. **94**, Birkhäuser, 1991.
- [4] MARC CHARDIN, *Contributions à l'algèbre commutative effective et à la théorie de l'élimination*, Thèse de l'Université Pierre et Marie Curie (Paris VI), 19 Février 1990.
- [5] MARC CHARDIN, *Differential Resultants and Subresultants*, Proceedings FCT'91, Lecture Notes in Comput. Sci. **529**, Springer-Verlag, 1991.
- [6] MARC CHARDIN, *The Resultant via a Koszul Complex*, Computational Algebraic Geometry (Actes de MEGA 92), Progress in Math. **109**, Birkhäuser, 1993.
- [7] MARC CHARDIN, *Multivariate Subresultants*, J. Pure Appl. Algebra **101**, 129–138 (1995).
- [8] MARC CHARDIN, *Sur l'annulation de l'homologie du complexe de Koszul gradué*, Bull. Soc. Math. France, **123**, 87–105 (1995).
- [9] MARC CHARDIN, *Formules à la Macaulay pour les sous-résultants en plusieurs variables*, C. R. Acad. Sci. Paris, **319**, Série I, 433–436 (1994).
- [10] MARC CHARDIN, *Sur l'indépendance linéaire de certains monômes modulo des polynômes génériques*, C. R. Acad. Sci. Paris, **319**, Série I, 1033–1036 (1994).
- [11] MARC CHARDIN, PATRICE PHILIPPON, *Régularité et interpolation*, J. Algebraic Geom., **8**, 471–481 (1999).
- [12] MARC CHARDIN, *Applications of some properties of the canonical module in projective algebraic geometry*, J. Symbolic Computation, **29**, 527–544 (2000).
- [13] MARC CHARDIN, DAVID EISENBUD, BERND ULRICH, *Hilbert functions and residually S_2 ideals*, Compositio, **125** (2), 193–219 (2001).
- [14] MARC CHARDIN, VESSELIN GASHAROV, IRENA PEEVA *Maximal Betti Numbers*, Proc. Amer. Math. Soc. **130**, 1877–1880 (2002).

- [15] MARC CHARDIN, BERND ULRICH, *Liaison and Castelnuovo-Mumford regularity*, Amer. J. Math. **124**, 1103–1124 (2002).
- [16] MARC CHARDIN, *Projective schemes: What is computable in low degree ?* Proceedings of EACA'2001, SIGSAM Bulletin **138** (2001).
- [17] MARC CHARDIN, GUILLERMO MORENO-SOCÍAS, *Regularity of lex-segment ideals: some closed formulas and applications*, Proc. Amer. Math. Soc. **131**, 1093–1102 (2003).
- [18] MARC CHARDIN, *Cohomology of projective schemes: From annihilators to vanishing*, J. Algebra **274**, 68–79 (2004).
- [19] MARC CHARDIN, CLARE D'CRUZ, *Castelnuovo-Mumford regularity: Examples of curves and surfaces*, J. Algebra **270**, 347–360 (2003).
- [20] MARC CHARDIN, *Bounds for Castelnuovo-Mumford regularity in terms of degrees of defining equations*, NATO Sci. Ser. II Math. Phys. Chem. **115**, 67–73 (2003).
- [21] MARC CHARDIN, *Liaison of varieties of small dimension and deficiency modules*, in *Commutative Algebra with a focus on Geometric and Homological Aspects*, Lecture Notes in Pure and Appl. Math. vol. 244 (2005).
- [22] LAURENT BUSÉ, MARC CHARDIN, *Implicitizing rational hypersurfaces using approximation complexes*, J. Symbolic Computation **40**, 1150–1168 (2005).
- [23] MARC CHARDIN, *Implicitization using approximation complexes*, Algebraic Geometry and Geometric Modeling. Mathematics and Visualization. Springer Verlag (2006).
- [24] MARC CHARDIN, AMADOU L. FALL, *Sur la régularité de Castelnuovo-Mumford des idéaux, en dimension deux*, C. R. Acad. Sci. Paris **341**, 233–238 (2005).
- [25] MARC CHARDIN, NGUYEN CONG MINH, NGÔ VIỆT TRUNG, *On the regularity of products and intersections of complete intersections*, Proc. Amer. Math. Soc. **135**, 1597-1606 (2007).
- [26] MARC CHARDIN, *Some results and questions on Castelnuovo-Mumford regularity*, Syzygies and Hilbert Functions. Lecture Notes in Pure and Appl. Math. 254, 1-40, 2007.
- [27] MARC CHARDIN, AMADOU L. FALL, UWE NAGEL, *Bounds for the Castelnuovo-Mumford regularity of modules*. Math. Z. **258**, 69-80 (2008).
- [28] MARC CHARDIN, STEVEN D. CUTKOSKY, JÜRGEN HERZOG, HEMA SRINIVASAN, *Duality and tameness*. Michigan Math. J. **57** (in honor of Mel Hochster), 137-156 (2008).
- [29] MARC CHARDIN, KAMRAN DIVAANI-AAZAR, *A duality theorem for generalized local cohomology*. Proc. Amer. Math. Soc. **136**, 2749-2754 (2008).
- [30] LAURENT BUSÉ, MARC CHARDIN, JEAN-PIERRE JOUANOLOU, *Torsion of the symmetric algebra and implicitization*. Proc. Amer. Math. Soc. **137**, 1855-1865 (2009).

[31] AGNES SZANTO, WITH AN APPENDIX BY MARC CHARDIN. *Solving overdetermined systems by the subresultant method*. J. Symbolic Computation **43**, 46-74 (2008).

[32] MARC CHARDIN, KAMRAN DIVAANI-AAZAR, *Generalized local cohomology and regularity of Ext modules*. J. Algebra **319**, 4780-4797 (2008).

[33] MARC CHARDIN, DAO THANH HA, LÊ TUÂN HOA, *Castelnuovo-Mumford regularity of Ext modules and homological degree*. Trans. Amer. Math. Soc. **363**, 3439-3456 (2011).

[34] LAURENT BUSÉ, MARC CHARDIN, ARON SIMIS, *Elimination and nonlinear equations of the Rees algebra*. J. Algebra **324**, 1314-1333 (2010).

Edition :

LUCHEZAR AVRAMOV, MARC CHARDIN, MARCEL MORALES, CLAUDIA POLINI, Eds. *Commutative Algebra. Interactions with Algebraic Geometry*, Contemporary Math. **331**, 2003. ISBN 0-8218-3233-6.