Dr Alban Quadrat – Curriculum vitæ

Date and place of birth:	7$^{\text{th}}$ April 1973, Le chesnay, France
Nationality:	French
Present position:	**Senior Researcher** Inria Paris, Ouragan project-team, Institut de Mathématiques de Jussieu-Paris Rive Gauche, Sorbonne Université, 4 Place Jussieu, 75252 Paris Cedex 05, France
Email address:	`alban.quadrat@inria.fr`
Web page:	https://who.rocq.inria.fr/Alban.Quadrat/
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Education and professional experience

2019– **Senior researcher**, Inria Paris
Project team: Outils de Résolution Algébriques pour la Géométrie et ses ApplicatioNs (Ouragan), https://team.inria.fr/ouragan/

2018 **Head** of the GAIA (Geometry, Algebra, Informatics, Applications) team
Inria Lille - Nord Europe

2015 **Senior researcher**, Inria Lille - Nord Europe
Project team: Non-Asymptotic estimation for online systems (Non-A)

2010 **Young graduate scientist**, Inria Saclay - Ile-de-France
Project team: Systèmes dynamiques interconnectés dans des environnements complexes (DISCO)

2010 **Habilitation thesis**, University of Nice Sophia-Antipolis,
Title: Systèmes et structures: une approche de la théorie mathématique des systèmes par l'analyse algébrique constructive
Section: Fundamental and Applied Sciences
Referees: V. Kučera, U. Oberst, W. Plesken
Examinators: M. Barkatou, A. Galligo, H. Lombardi, P. Maisonobe, P. Rouchon

2001 **Young graduate scientist**, Inria Sophia Antipolis
Project team: Computer Algebra and Functional Equations (CAFE)

2000 **Postdoctoral researcher**, University of Leeds
Algebraic and analytic aspects of feedback stabilization
Department of Pure Mathematics, 17 months
Marie Curie Fellowship "Improving Human Research Potential 30"

1999 **Military service**, Scientifique du contingent, Laboratoire de Recherches Balistiques et Aérodynamiques (DGA, Vernon)

1999 **Ph.D. thesis, Ecole Nationale des Ponts et Chaussées**
Title: Analyse algébrique des systèmes de contrôle linéaires multidimensionnels
Section: Applied Mathematics and Computer Science
Referees: M. Fliess, G. LeVey, J. C. Willems
Examinators: M. Bronstein, S. Diop, C. Sabbah
Supervisor: J.-F. Pommaret

1996 **Master degree in control theory and signal processing**
University of Paris XI (Orsay), MENESRT grant for a Ph.D. thesis

1995 **Bachelor degree in Mathematics**, University of Versailles

Research interests/keywords: Functional systems, algebraic analysis, homological algebra, module theory, effective algebra, computer algebra, symbolic and symbolic-numeric methods, software, applications to control theory and signal processing.

Collective responsabilities: Board of directors of the *French Mathematical Society* (SMF), 2019- –, *head* of the Inria Lille team GAIA, 2018, Bureau du *Comité des Equipes-Projets* (BCEP), Inria Lille - Nord Europe, 2017–2018, and *Commission des Emplois de Recherche* (CER), Inria Lille - Nord Europe, 2016–2018, *correspondant RaWeb*, Inria Lille - Nord Europe, 2017–2018, co-organizer of the *Journées Nationales de Calcul Formel* (JNCF), 2018 & 2019, member of the scientific committee of *Journées Nationales de Calcul Formel* (JNCF), 2010–2015 and since 2019, member of the *IFAC Technical Committee "Linear Systems"* (International Federation of Automatic Control) since 2013, recruitment committees, etc.

Associate editor of *Multidimensional Systems and Signal Processing*, Springer since 2007, co-editor of the book *Algebraic and Symbolic Computation Methods in Dynamical Systems*, collection *Advances in Delays and Dynamics*, Springer, 2020, co-editor of the special issue *Symbolic Methods in Multidimensional Systems Theory* for the journal *Multidimensional Systems and Signal Processing*, Springer, vol. 26, 2015, co-organizer of four mini-workshops (CIRM 2016, Oberwolfach 2013, CIRM 2011, Oberwolfach 2010) on constructive homological algebra and its applications, co-organizer of mini-symposia and invited sessions (IFAC 2020, SSSC 2019, ECC 2018, IFAC 2017, MTNS 2016, MTNS 2014, nDS'13, SSSC'13, MTNS 2010, MTNS 2006, TDS 2003), conferences (CASC 2018, JAMACS16, CPDE 2013), summer schools (AACA 09, Otzenhausen 03), IPC (nDS'17, nDS'15, nDS'13, nDS'11, CDPS'09), etc.

Local leader of the *ANR MSDOS* (Multidimensional Systems: Digression On Stability), 2014-2017, principal investigator of *PHC Parrot grant* with Tallinn University (2013-2014) and of a *PHC Procope grant* with Aachen RWTH (2006-2007), members of different projects, etc.

Supervision activity: V. Hatey (Master), G. Younes (Ph.D. thesis), C. Chenavier (postdoc), G. Rance (CIFRE Ph.D. thesis), Y. Bouzidi (postdoc), G. Regensburger (postdoc), Q. Renvoise (L3), N. Ribard (Master), K. Halturina (Master), T. Cluzeau (postdoc), A. Chakhar (Ph.D. thesis), A. Fabiańska (Ph.D. thesis), D. Robertz (Ph.D. thesis), J. Evers (MIT), G. Culianez (INSA Toulouse), S. S. Maris (Master).

Teaching: Computer algebra, constructive algebra, algebra, linear algebra, differential calculus, optimization, linear programming, probabilities, statistics, logic and proofs.

Invitations: Invitations from different universities (Aachen & Kaiserslautern (Germany), Beer-Shiva (Israel), Blacksburg (USA), Bogota (Colombia), Cape Town (South Africa), Innsbruck & Linz (Austria), KIAS (Seoul), Leiden & Groningen (Netherlands), Muscat (Sultanate of Oman), Southampton (U.K.), Tampere (Finland), Trieste (Italy), Zielona Gora (Poland), etc.).

Important talks: Semi-plenary speaker at the *Colombian Congress of Mathematics*, Barranquilla 2013, at *The Netherlands Congress of Mathematicians*, Gröningen 2009, and at the 18^{th} *International Symposium on Mathematical Theory of Networks and Systems*, Virginia Tech 2008. Plenary talk at the 5^{th} *International Workshop On Differential Algebra and Related Topics* (DART V), Lille, France 2013.

Software realization (`Maple`, `Mathematica`, `GAP`):

- OreModules (https://who.rocq.inria.fr/Alban.Quadrat/OreModules.html)
- OreMorphisms (https://who.rocq.inria.fr/Alban.Quadrat/OreMorphisms.html)
- Stafford (https://who.rocq.inria.fr/Alban.Quadrat/Stafford.html)
- QuillenSuslin (https://who.rocq.inria.fr/Alban.Quadrat/QuillenSuslin.html)
- PurityFiltration (https://who.rocq.inria.fr/Alban.Quadrat/PurityFiltration.html)
- OreAlgebraicAnalysis (https://who.rocq.inria.fr/Alban.Quadrat/OreAlgebraicAnalysis.html)
- Schwarz (https://who.rocq.inria.fr/Alban.Quadrat/Schwarz.html)
- `homalg` packages: AbelianSystems, SystemTheory (https://github.com/homalg-project/AbelianSystems, https://github.com/homalg-project/SystemTheory)

Industrial transfert: Safran Electronics & Defense: *Research contract* 2013, *CIFRE Ph.D. thesis* (2015-2018, G. Rance), Safran Tech: research contract, 2018.

Patent: R. Dagher, A. Quadrat, G. Zheng (2018). *Auto-localisation par mesure de distances,* n. FR1853553, Inria France.

Publications: 24 papers published in international journals with selection panels, 12 chapters of books, and 70 congress papers in international conferences with selection panels.

Publications

- **Articles in international journals with selection panels**

1. Bouzidi, Y., **Quadrat, A.**, Rouillier, F. (2019). "Certified non-conservative tests for the structural stability of multidimensional systems", *Multidimensional Systems and Signal Processing*, vol. 30, pp. 1205–1235.
2. Laakkonen, P., **Quadrat, A.** (2017). "A fractional representation approach to the robust regulation problem for SISO systems", *Systems and Control Letters*, vol. 103, pp. 32–37.
3. Cluzeau, T., **Quadrat, A.** (2015). "A new insight into Serre's reduction problem", *Linear Algebra and its Applications*, vol. 483, pp. 40–100.
4. **Quadrat, A.**, Robertz, D. (2014). "A constructive study of the module structure of rings of partial differential operators", *Acta Applicandæ Mathematicæ*, vol. 133, pp. 187–234.
5. **Quadrat**, A., (2013). "Grade filtration of linear functional systems", *Acta Applicandæ Mathematicæ*, vol. 127, pp. 27–86.
6. Cluzeau, T., **Quadrat**, A., (2012). "Serre's reduction of linear systems of partial differential equations with holonomic adjoints", *Journal of Symbolic Computation*, vol. 47, pp. 1192–1213.

7. Boudellioua M. S., **Quadrat** A., (2010). "Serre's reduction of linear functional systems", *Mathematics in Computer Science*, vol. 4, pp. 289–312.

8. Cluzeau, T., **Quadrat**, A., (2008). "Factoring and decomposing a class of linear functional systems", *Linear Algebra and Its Applications*, vol. 428, pp. 324-3-81.

9. **Quadrat**, A., Robertz, D., (2007). "Computation of bases of free modules over the Weyl algebras", *Journal of Symbolic Computation*, vol. 42, pp. 1113-1-141.

10. **Quadrat**, A., (2006). "On a generalization of the Youla-Kučera parametrization. Part II: The lattice approach to MIMO systems", *Mathematics of Control, Signals, and Systems*, vol. 18, no. 3, pp. 199–235.

11. **Quadrat**, A., (2006). "A lattice approach to analysis and synthesis problems", *Mathematics of Control, Signals, and Systems*, vol. 18, no. 2, pp. 147–186.

12. Chyzak, F., **Quadrat**, A., Robertz, D., (2005). "Effective algorithms for parametrizing linear control systems over Ore algebras", *Applicable Algebra in Engineering, Communications and Computing,* vol. 16, no. 5, pp. 319–376.

13. **Quadrat**, A., (2005). "An algebraic interpretation to the operator-theoretic approach. Part I: SISO systems", *Acta Applicandæ Mathematicæ*, vol. 88, no. 1, pp. 1–45.

14. **Quadrat**, A., (2004). "On a general structure of the stabilizing controllers based on stable range", *SIAM Journal of Control and Optimization*, vol. 42, no. 6, pp. 2264–2285.

15. Pommaret, J.-F., **Quadrat**, A., (2004). "A differential operator approach to multidimensional optimal control", *International Journal of Control*, vol. 77, no. 9, pp. 821–836.

16. **Quadrat**, A., (2004). "An introduction to internal stabilization of infinite-dimensional linear systems", electronic journal *e-STA*, vol. 1, no. 1.

17. **Quadrat**, A., (2003). "On a generalization of the Youla-Kučera parametrization. Part I: The fractional ideal approach to SISO systems", *Systems and Control Letters*, vol. 50, no. 2, pp. 135–148.

18. **Quadrat**, A., (2003). "The fractional representation approach to synthesis problems: An algebraic analysis viewpoint. Part II: Internal stabilization", *SIAM Journal of Control and Optimization*, vol. 42, no. 1, pp. 300–320.

19. **Quadrat**, A., (2003). "The fractional representation approach to synthesis problems: An algebraic analysis viewpoint. Part I: (Weakly) doubly coprime factorizations", *SIAM Journal of Control and Optimization*, vol. 42, no. 1, pp. 266–299.

20. Pommaret, J.-F., **Quadrat**, A., (2003). "A functorial approach to the behaviour of multidimensional control systems", *Applied Mathematics and Computer Science*, vol. 13, no. 1, pp. 7–13.

21. Pommaret, J.-F., **Quadrat**, A., (2000). "Formal elimination for multidimensional systems and applications to control theory", *Mathematics of Control, Signals and Systems*, vol. 13, no. 3, pp. 193–215.

22. Pommaret, J.-F., **Quadrat**, A., (1999). "Algebraic analysis of linear multidimensional control systems", *IMA Journal of Mathematical Control and Information*, vol. 16, no. 3, pp. 275–297.

23. Pommaret, J.-F., **Quadrat**, A., (1999). "Localization and parametrization of linear multidimensional control systems", *Systems and Control Letters*, vol. 37, no. 4, pp. 247–260.
24. Pommaret, J.-F., **Quadrat**, A., (1998). "Generalized Bézout identity", *Applicable Algebra in Engineering, Communication and Computing*, vol. 9, no. 2, pp. 91–116.

- **Chapters of books**

1. Bouzidi, Y., Cluzeau, T., **Quadrat, A.**, Rouillier, F. (2020). "On the effective computation of stabilizing controllers of 2D systems", *Maple in Mathematics Education and Research, Communications in Computer and Information Science*, vol. 1125, Springer, 2020, 30–49.
2. **Quadrat, A.**, Regensburger, G. (2020). "Computing polynomial solutions and annihilators of integro-differential operators with polynomial coefficients", *Algebraic Methods and Symbolic-Numeric Computation in Systems Theory*, Springer, 87–114.
3. Cluzeau, T., **Quadrat, A.** (2020). "Equivalences of linear functional systems", *Algebraic Methods and Symbolic-Numeric Computation in Systems Theory*, Springer, 53–86.
4. Cluzeau, T., Koutschan, C., **Quadrat, A.**, Tõnso, M. (2020). "Effective algebraic analysis approach to linear systems over Ore algebras", *Algebraic Methods and Symbolic-Numeric Computation in Systems Theory*, Springer, 4–52.
5. Bouzidi, Y., Poteaux, A., **Quadrat, A.** (2019). "A symbolic computation approach to the asymptotic stability analysis of differential systems with commensurate delays", *Delays and Interconnections: Methodology, Algorithms and Applications*, Advances in Delays and Dynamics 10, Springer, pp. 169–185.
6. **Quadrat, A.** (2016), Appendix of Pommaret, J.-F., "Bianchi identities for the Riemann and Weyl tensor", in Pommaret, J.-F., *Deformation Theory of Algebraic and Geometric Structures*, Lambert Academic Publishing, 2016, pp. 154–174.
7. **Quadrat, A.**, Quadrat, A., (2014). "Delay effects in visual tracking problems for an optronic sighting system", to appear in *Low-Complexity Controllers for Time-Delay Systems, Advances in Delays and Dynamics 2*, A. Seuret et al. (eds.), Springer, chapter 6, pp. 77–92.
8. Cluzeau, T., Dolean, V., Nataf, F., **Quadrat**, A., (2013). "Symbolic preconditioning techniques for linear systems of partial differential equations", in *Domain Decomposition Methods in Science and Engineering XX*, R. Bank et al. (eds.), *Lecture Notes in Computational Science and Engineering* (LNCSE), vol. 91, Springer, pp. 27–38.
9. Cluzeau, T., **Quadrat**, A., (2009). "On algebraic simplifications of linear functional systems", in *Topics in Time-Delay Systems: Analysis, Algorithms and Control*, J.-J. Loiseau, W. Michiels, S.-I. Niculescu and R. Sipahi (eds.), Lecture Notes in Control and Information Sciences (LNCIS) 388, Springer, pp. 167–178.
10. Cluzeau, T., **Quadrat**, A., (2009). "OreMorphisms: A homological algebraic package for factoring and decomposing linear functional systems", in *Topics in Time-Delay Systems: Analysis, Algorithms and Control*, J.-J. Loiseau, W. Michiels, S.-I. Niculescu, and R. Sipahi (eds.), Lecture Notes in Control and Information Sciences (LNCIS) 388, Springer, pp. 179–196.

11. Fabiańska, A., **Quadrat**, A., (2007). "Applications of the Quillen-Suslin theorem to multidimensional systems theory", in *Gröbner Bases in Control Theory and Signal Processing*, H. Park and G. Regensburger (eds.), Radon Series on Computation and Applied Mathematics 3, de Gruyter publisher, pp. 23–106.
12. Chyzak, F., **Quadrat**, A., Robertz, D., (2007). "OreModules: A symbolic package for the study of multidimensional linear systems", in *Applications of Time-Delay Systems*, J. Chiasson and J.-J. Loiseau (eds.), Lecture Notes in Control and Information Sciences (LNCIS) 352, Springer, pp. 233–264.

- **Articles in international congresses with selection panels**

1. Hubert, E., Barrau, A., Bouzidi, Y., Dagher, R., **Quadrat, A.** (2020). "Algebraic aspects of a rank factorization problem arising in vibration analysis", *Maple Conference 2020*, Waterloo (Canada), 02-06/11/2020.
2. Hubert, E., Bouzidi, Y., Dagher, R., Barrau, A., **Quadrat, A.** (2019). "Algebraic aspects of the exact signal demodulation problem", *SSSC & TDS*, Sinaia (Romania), 09-11/09/2019.
3. Bouzidi, Y., Cluzeau, T., **Quadrat, A.** (2019). "On the computation of stabilizing controllers of multidimensional systems", *SSSC & TDS IFAC Workshops*, Sinaia (Romania), 09-11/09/2019.
4. Boulier, F., Castel, H., Corson, N., Lanza, N., Lemaire, L., Poteaux, A., **Quadrat, A.**, Verdière, N. (2018). "Symbolic-numeric methods for nonlinear integro-differential modeling", *Computer Algebra in Scientific Computing*, Lille (France), 17-21/08/2018.
5. Cluzeau, T., Hossein, J., **Quadrat, A.**, Raab C., Regensburger, G. (2018). "Symbolic computation for integro-differential-time-delay operators with matrix coefficients", 14^{th} *IFAC Workshop on Time Delay Systems*, Budapest (Hungary), 28-30/06/2018.
6. Barrau, A., Rance, G., Bouzidi, Y., **Quadrat, A.**, Quadrat, A. (2018). "Using symbolic computation to solve algebraic Riccati equations arising in invariant filtering", *European Control Conference (ECC) 2018*, Limassol (Cyprus), 12-15/06/2018.
7. Rance, G., Bouzidi, Y., **Quadrat, A.**, Quadrat, A. (2018). "Parametric sub-optimal H_∞ controllers for an optro-mechanical system modeled by a time-delay 4th order system", 8^{th} *International Symposium on Optronics in Defence and Security* (OPTRO2018), Paris (France), 06-08/02/2018.
8. **Quadrat, A.** (2017). "Towards an effective study of the algebraic parameter estimation problem", *IFAC 2017 Workshop Congress*, Toulouse (France), 09-14/07/2017.
9. Bouzidi, Y., Cluzeau, T., Moroz, G., **Quadrat, A.** (2017). "Computing effectively stabilizing controllers for a class of nD systems", *IFAC 2017 Workshop Congress*, Toulouse (France), 09-14/07/2017.
10. Rance, G., Bouzidi, Y., **Quadrat, A.**, Quadrat, A., Rouillier, F. (2017). "Explicit H_∞ controllers for 4th order single-input single-output systems with parameters and their applications to the two mass-spring system with damping", *IFAC 2017 Workshop Congress*, Toulouse (France), 09-14/07/2017.
11. Rance, G., Bouzidi, Y., **Quadrat, A.**, Quadrat, A. (2017). "Explicit H_∞ controllers for 1st to 3rd order single-input single-output systems with parameters", *IFAC 2017 Workshop Congress*, Toulouse (France), 09-14/07/2017.

12. Rance, G., Bouzidi, Y., **Quadrat, A.**, Quadrat, A. (2016). "A symbolic-numeric method for the parametric H_∞ loop-shaping design problem", 22^{nd} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS) , University of Minnesota, Minneapolis (USA), 12-15/07/2016.
13. Bouzidi, Y., Poteaux, A., **Quadrat, A.** (2016). "Computer algebra methods for the stability analysis of differential systems with commensurate time-delays", 13^{th} *IFAC Workshop on Time Delay Systems*, Istanbul (Turkey), 22-24/06/2016.
14. Ushirobira, R., **Quadrat, A.** (2016). "Algebraic estimation of a biased and noisy continuous signal via orthogonal polynomials", 51^{th} *IEEE Conference on Decision and Control*, Las Vegas (USA), 12-14/12/2016.
15. **Quadrat, A.**, Ushirobira, R. (2016). "Algebraic analysis for the Ore extension rings of differential time-varying delay operators", 22^{nd} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS) , University of Minnesota, Minneapolis (USA), 12-15/07/2016.
16. Bekcheva, M., Greco, L., Mounier, H., **Quadrat, A.** (2015). "Euler-Bernoulli beam flatness based control with constraints", *IEEE* 9^{th} *International Workshop on Multidimensional (nD) Systems* (IEEE nDS 2015), Vila Real (Portugal), 07-09/09/15.
17. **Quadrat, A.** (2015). "A constructive algebraic analysis approach to Artstein's reduction of linear time-delay systems", 12^{th} *IFAC Workshop on Time Delay Systems*, University of Michigan, Ann Arbor (USA), 28-30/05/2015.
18. **Quadrat, A.** (2015). "The homological perturbation lemma and its applications to robust stabilization", 8^{th} *IFAC Symposium on Robust Control Design* (ROCOND), Bratislava (Slovakia) 08-11/07/15.
19. Laakkonen, P., **Quadrat, A.** (2015). "Robust regulation of SISO systems: The fractional ideal approach", *2015 SIAM Conference on Control and Its Applications*, Paris (France), 08-10/07/15.
20. **Quadrat, A.** (2013). "Restrictions of n-D behaviours and inverse images of D-modules", 21^{st} *International Symposium on Mathematical Theory of Networks and Systems*, Groningen (The Netherlands), 07-11/07/14.
21. **Quadrat, A.** (2013). "Study of a spectral sequence central in the behavioural approach", 21^{st} *International Symposium on Mathematical Theory of Networks and Systems*, Groningen (The Netherlands), 07-11/07/14.
22. **Quadrat, A**. (2014). "Noncommutative geometric structures on stabilizable infinite-dimensional linear systems", *European Control Conference 2014*, Strasbourg (France) 24-27/06/14.
23. Cluzeau, T., **Quadrat, A.** (2013). "Isomorphisms and Serre's reduction of linear systems", *nDS'13*, Erlangen (Germany) 9-11/09/13.
24. **Quadrat, A.** (2013). "Yoneda product of multidimensional systems", *nDS'13*, Erlangen (Germany) 9-11/09/13.
25. **Quadrat, A.**, Regensburger, G. (2013). "Polynomial solutions and annihilators of ordinary integro-differential operators", 5^{th} *Symposium on System Structure and Control*, Grenoble (France), 04-06/02/13.
26. **Quadrat, A.**, Robertz, D. (2013). "Stafford's reduction of linear partial differential systems", 5^{th} *Symposium on System Structure and Control*, Grenoble (France), 04-06/02/13.

27. Cluzeau, T., **Quadrat, A.** (2013). "Further results on the decomposition and Serre's reduction of linear functional systems", 5^{th} *Symposium on System Structure and Control*, Grenoble (France), 04-06/02/13.
28. **Quadrat**, A. (2012). "Connexions sur les systèmes linéaires stabilisables", *CIFA2012*, Grenoble (France), 04-06/08/12.
29. **Quadrat**, A., Quadrat, A. (2012). "Etude de l'effet du retard dans une boucle de tracking d'un viseur gyrostabilisé ", *CIFA2012*, Grenoble (France), 04-06/08/12.
30. **Quadrat**, A. (2011). "Equidimensional triangularization of multidimensional linear systems", *nDS'11*, Poitiers (France), 05-07/09/11.
31. **Quadrat**, A. (2011). "Purity filtration of multidimensional linear systems", *nDS'11*, Poitiers (France), 05-07/09/11.
32. Cluzeau, T., **Quadrat**, A. (2011). "A constructive version of Fitting's theorem on isomorphisms and equivalences of linear systems", *nDS'11*, Poitiers (France), 05-07/09/11.
33. Chakhar, A., Cluzeau, T., **Quadrat**, A. (2011). "An algebraic analysis approach to certain classes of nonlinear partial differential systems", *nDS'11*, Poitiers (France), 05-07/09/11.
34. Barkatou, M., El Bacha, C., **Cluzeau**, T., Quadrat, A. (2011). "Monge parametrizations and integration of rectangular linear differential systems", *MEGA 2011*, Stockholm (Sweden), 30/05-03/06/11.
35. Boudellioua, M. S., **Quadrat**, A., (2010). "Further results on Serre's reduction of multidimensional linear systems", 19^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest (Hungary), 05-09/07/10.
36. Cluzeau, T., **Quadrat**, A., (2010). "Serre's reduction of linear partial differential systems based on holonomy", 19^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest (Hungary), 05-09/07/10.
37. Cluzeau, T., **Quadrat**, A., (2010). "Symmetries, parametrizations and potentials of multidimensional linear systems", 19^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest (Hungary), 05-09/07/10.
38. Cluzeau, T., **Quadrat**, A., (2010). "Module structure of classical multidimensional linear systems appearing in mathematical physics", 19^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest (Hungary), 05-09/07/10.
39. **Quadrat**, A., Robertz, D., (2010). "Controllability and differential flatness of linear analytic ordinary differential systems", 19^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest (Hungary), 05-09/07/10.
40. **Quadrat**, A., (2010). "Purity filtration of 2-dimensional linear systems", 19^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest (Hungary), 05-09/07/10.
41. **Quadrat**, A., (2010). "Extendability of multidimensional linear systems", 19^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2010), Budapest (Hungary), 05-09/07/10.
42. **Quadrat**, A., (2009). "Lattices, operators and duality", *Workshop on Control of Distributed Parameter Systems* (CDPS 2009), Toulouse (France), 20-24/07/09.

43. Boudellioua, M. S., **Quadrat**, A., (2008). "Reduction of linear systems based on Serre's theorem", 18^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2008), Virginia (U.S.A.), 28/07-01/08/08.
44. **Quadrat**, A., (2008). "New perspectives in algebraic systems theory", 18^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2008), Virginia (U.S.A.), 28/07/08-01/08/08, semi-plenary talk.
45. **Quadrat**, A., Robertz, D., (2008). "Baer's extension problem for multidimensional linear systems", 18^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2008), Virginia (U.S.A.), 28/07/08-01/08/08.
46. **Quadrat**, A., (2007). "A historical journey through the internal stabilization problem", *Workshop on Control of Distributed Parameter Systems* (CDPS 2007), Tribute to Frank M. Callier, Namur (Belgium), 23-27/07/07.
47. Cluzeau, T., **Quadrat**, A., (2006). "Using morphism computations for factoring and decomposing general linear functional systems", 17^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2006), Kyoto (Japan), 24-28/07/06.
48. Fabiańska, A., **Quadrat**, A., (2006). "Flat multidimensional linear systems with constant coefficients are equivalent to controllable 1-D linear systems", 17^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2006), Kyoto (Japan), 24-28/07/06.
49. **Quadrat**, A., Robertz, D., (2006). "Constructive computation of flat outputs of a class of multidimensional linear systems with variable coefficients", 17^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2006), Kyoto (Japan), 24-28/07/06.
50. **Quadrat**, A., Robertz, D., (2006). "On the Monge problem and multidimensional optimal control", 17^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2006), Kyoto (Japan), 24-28/07/06.
51. **Quadrat**, A., Robertz, D., (2005). "On the blowing-up of stably free behaviours", *Conference on Decision and Control* (CDC) and *European Control Conference* (ECC), Sevilla (Spain), 12-15/12/05.
52. **Quadrat**, A., Robertz, D., (2005). "Parametrizing all solutions of uncontrollable multidimensional linear systems", 16^{th} *IFAC World Congress*, Prague (Czech Republic), 03-08/07/05.
53. **Quadrat**, A., (2005). "An elementary proof of the general Q-parametrization of all stabilizing controllers", 16^{th} *IFAC World Congress*, Prague (Czech Republic), 03-08/07/05.
54. Chyzak, F., **Quadrat**, A., Robertz, D., (2004). "OreModules: A symbolic package for the study of multidimensional linear systems", 16^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2004), Louvain (Belgium), 05-09/07/04.
55. **Quadrat**, A., (2004). "Every internally stabilizable multidimensional system admits a doubly coprime factorization", 16^{th} *International Symposium on Mathematical Theory of Networks and Systems* (MTNS 2004), Louvain (Belgium), 05-09/07/04.
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2. Hubert, E., Barrau, A., Bouzidi, Y., Dagher, R., **Quadrat, A.** (2020). "Centrohermitian solutions of a factorization problem arising in vibration analysis. Part I: Lee's transformation", submitted.
3. **Quadrat, A.**, Ushirobira, R. (2020). "On the Ore extension ring of differential time-varying delay operators", in preparation.
4. **Quadrat, A.**, *Algebraic Analysis of Linear Functional Systems*, book in preparation.