

CASALE Guy

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1 Positions & Education

- Sept. 2006** Assistant Professeur at IRMAR, Université Rennes 1.
2006 Postdoc Researcher (Marie-Curie) at Universitat Autònoma de Barcelona.
Jan-Feb 2006 Postdoc Researcher (GIFT) at Université Toulouse III.
2004-2005 Postdoc Researcher (JSPS) at The University of Tokyo.
July 2004 Ph.D Thesis from Université Toulouse III : *On the Galois groupoid of foliations*.
Advisors E. Paul and J.-P. Ramis.
2001-2004 Ph.D. student and part-time instructor at Université Toulouse III.
2001 Master of Research in Maths : *Classification of algebraic Lie groupoid on the disc*
1999 Bachelor degree in Mathematics

2 Scientific responsibilities

- Coorganization of «**Liouville**» meeting in September 2007 at IRMAR, Université Rennes 1 of the [Integrability ANR project](#)
- Coorganization of the «**Integrable Systems Session** » of the French-Spanish Congress in Mathematics, July 2007 at Universidad de Zaragoza
- Organization of the [Analytic Geometry seminar](#) (weekly)
- Referee for international math. journals.
- Coorganization with Pr. T. Fiedler of a winter school of **Geometry & Topology** for graduate students of Toulouse Universities, 2000 – 2003.

3 Teaching experience

I taught at all levels in France from first year undergraduate to graduate classes including Basic Algebra, Differential Calculus, MATLAB, MAPLE, Differential Equations, Lebesgue Integral, Probability, Lessons for high school teachers and a mini-course about Formal Theory of pde for Ph.D. students.

More details (in french) on my [teaching webpage](#).

4 Invitations & Collaborations

- Invitation of Seiji Nishioka in June & July 2010
- Invited at IHES in January 2010
- Invitation of Gabriel Calsamiglia-Mendlewiez in May 2008.
- Invited at the University of Toruń, Poland, April 2008.
- Invitation of Maria Przybylska at Rennes in July 2007.
- Invited at Newton Institute, Cambridge, for 1 month in September 2006 by «**Painlevé Equation and Monodromy Problems**» programme.
- Invited at Nagoya University for 2 weeks in February 2005 by the COE programme.

5 Grants

- 2011-2014 Member of the «**q-diff**» JCJC project of ANR,
- 2005-2008 Member of the «**Intégrabilité**» project n° JC05_41465 of **ANR** (National Research Agency),
- 2006 Marie-Curie Fellowship (EIF-025116-Diff. Galois Theory),
- 2005 Global Integrability of Field Theories Fellowship,
- 2005 «**Initiative PostDoc**» Mobility Grant from Académie des Sciences,
- 2004 JSPS Research Grant (Kakenhi),
- 2004 JSPS Fellowship (FY2004, ID P4788),
- 2004 «**ATUPS**» Mobility Grant from Université Toulouse III,
- 2001-2004 Ph.D. Fellowship from French Research Board,
- 2000 Master Fellowship from French Minister of Education.

6 Publications

- **Comptes-Rendus :**
 1. *Suites de Godbillon-Vey et intégrales premières* C. R. Acad. Sci. Paris **335** (2002)
 2. *Irréductibilité de la première équation de Painlevé* C. R. Acad. Sci. Paris **343** (2006)
- **Proceedings :**
 3. *Reducibility & Galois groupoid* Proceedings of Global Integrability in Field Theories 2006 Cockcroft Institute (UK) J. Calmet / W.M. Seiler / R.W. Tucker (Eds) Universitätsverlag Karlsruhe (2006)
 4. *The Galois groupoid of Picard-Painlevé sixth equation* Proceedings of the French-Japanese Conference *Algebraic, Analytic and Geometric Aspect of Complex Differential Equations and their Deformations. Painlevé Hierarchies*. RIMS Kôkyûroku Bessatsu vol **B2** (2007)
- **Articles :**
 5. *D-enveloppe d'un difféomorphisme de $(\mathbb{C}, 0)$* Ann. Fac. Sci. Toulouse Math. (6) **13** n°4 (2004)
 6. *Feuilletages singuliers de codimension un; groupoïde de Galois et intégrales premières* Ann. Institut Fourier **56** n°3 (2006)
 7. *L'enveloppe galoisienne d'une application rationnelle* Publication Mathématiques **50** n°1 (2006)
 8. *Le groupoïde de Galois de P_1 et son irréductibilité* Commentarii Mathematici Helvetici **83** n°3 (2008)
 9. *Une preuve galoisienne de l'irréductibilité au sens de Nishioka-Umemura de la 1ère équation de Painlevé* Differential equation and Singularities. 60th years of J.M.Aroca Astérisque **323** (2009)
 10. [with J. ROQUES] *Integrability of discrete Hamiltonians and difference Galois theory* Int. Math. Res. Notices Vol. 2008 (2008)
 11. [with G. DUVAL, A. J. MACIEJEWSKI & M. PRYBYLSKA] *Integrability of natural Hamiltonian systems with homogeneous potentials of degree zero* Physics Letter A **374** (2010)
 12. *Morales-Ramis Theorems via Malgrange pseudogroup* Ann. Institut Fourier **59** n°7 (2009)
- **Other texts**
 - . *Local irreducibility of the first Painlevé equation* in preparation
 - . *On Drach's conjecture*
 - . **Ph.D. Thesis** defended in July the 9th 2004 : *Sur le groupoïde de Galois d'un feuilletage*
 - . *A proof of a theorem of Khovanskii* submitted
 - . *An introduction to Malgrange pseudogroup* submitted
 - . [with J. ROQUES] *Nonintegrability by discrete quadratures* submitted

7 Conferences

- * Conference in honor of J. Écalle (CIRM) November 2002
«*D-envelope of a diffeomorphism of $(\mathbb{C}, 0)$* »
- * Workshop on Non-Linear Differential Galois Theory (UAB, Barcelona) July 2004
«*Groupe de Galois et résolvente de Drach*»
- * Okayama Summer School on Functional and Differential Equations (Okayama) August 2005
«*The irreducibility of P_1* »
- * Kobe Workshop on Integrable systems and Painlevé equations (Kobe) November 2005
«*On Drach conjecture*»
- * Conference on Singularities and Differential Equations – A Satellite Conference of ICM 2006 (Tordesillas) September 2006
«*Local irreducibility of the first Painlevé equation*»
- * Painlevé Equations and Monodromy Problems I (Newton Inst. Cambridge) September 2006
«*Local irreducibility of the first Painlevé equation*»
- * Painlevé Equations and Monodromy Problems II (Newton Inst. Cambridge) September 2006
«*The Galois groupoid of Picard-Painlevé VI equation*»
- * Workshop on Global Integrability of Field Theories (Cockcroft Inst. Daresbury) November 2006
«*The Galois groupoid of Picard-Painlevé VI equation*»
- * Algebraic Methods in Dynamical Systems (Barcelona) February 2008
«*Integrability of discrete Hamiltonian and difference equations*»
- * From Painlevé to Okamoto; Conference in honor of Kazuo Okamoto (Tokyo) June 2008
«*About dicritical singularities of foliations of $(\mathbb{C}^2, 0)$* »
- * Équations aux dérivées partielles & théorie de Galois différentielle
Conference in honor of Bernard Malgrange (CIRM) October 2008
«*Local irreducibility of P_1* »
- * Differential Algebra and Related Topics 3th (Newark) November 2008
«*On nonlinear differential Galois theory*»
- * Algebraic Theory of Difference Equations (Leeds) May 2009
«*Galois theory for nonlinear difference equations*»
- * Théories galoisiennes et arithmétiques des équations différentielles (CIRM) September 2009
«*Malgrange (Galois) Pseudogroup; Examples & Applications*» 4x1h
- * q -days in Toulouse (Toulouse) October 2009
«*A q -Morales-Ramis Theorem*»
- * Théories de Galois géométrique et différentielles (CIRM) March 2010
«*Galois theory for difference or differential equations* »
- * Algebraic Methods in Dynamical Systems (Bedlewo) may 2010
«*A discrete version of Morales-Ramis theorems*»
- * UPC International Integrability Seminar (Barcelona) June 2010
«*A discrete version of Morales-Ramis theorems*»
- * Équations différentielles et fonctionnelles (Lille) June 2010
«*A linear test for irreducibility*»
- * Singularities and Foliations; Conference in honor of Jean-François Mattei (Toulouse) June 2010
«*Holonomy and first integrals following Mattei, Moussu et Cerveau*»
- * Ddays, reunión de la red temàtica DANCE (Calatayud) November 2010
«*Galois Theory for non linear ODE* »

8 Seminars

- * *Classification des $\mathcal{D}$ -groupoïdes de Lie sur $(\mathbb{C}, 0)$*
– Geometry seminar (UAB, Barcelona), May 2002
- * *Groupe de Galois et suites de Godbillon-Vey*
– INRIA (Sophia-Antipolis), October 2002
– Analytic geometry seminar (Rennes), September 2003
- * *La $\mathcal{D}$ -enveloppe d'une application rationnelle*

- Complex analysis seminar (Toulouse), October 2003
- Complex dynamics seminar (Kyoto Daigaku), July 2005
- * *Le groupoïde de Galois d'un feuilletage*
 - Weekly seminar (La Rochelle), November 2003
 - Differential equation seminar (Strasbourg), September 2004
 - General seminar (Dijon), September 2004
 - Okamoto seminar (Tokyo Daigaku), November 2004
 - Differential algebra seminar (Paris 6), May 2005
- * *Groupoïde de Galois et extensions fortement normales*
 - Differential equation seminar (Lille), May 2004
 - Differential equation seminar (Dijon), September 2004
 - Mathematics seminar (ens Lyon), October 2004
 - Algebra and geometry seminar (Grenoble), October 2004
- * *Galois theory for nonlinear differential equations : I-Definitions, II-Examples*
 - COE seminar (Nagoya Daigaku), February 2005
 - Geometry seminar (Univ. Aut. Barcelona), April 2006
 - Geometry seminar (Paris 6), April 2006
- * *The Galois groupoid of the first Painlevé equation*
 - Okamoto seminar (Tokyo Daigaku), April 2005
 - Foliations and integrable systems seminar (Toulouse), May 2005
- * *The irreducibility of P_1*
 - Okamoto seminar (Tokyo Daigaku), December 2005
 - GIFT meeting (Amsterdam), January 2006
- * *On Drach conjecture*
 - Okamoto seminar (Tokyo Daigaku), October 2005
- * *Le groupoïde de Galois de P_1 et son irréductibilité*
 - Differential Galois seminar (Lille), January 2006
 - Differential equations seminar (Strasbourg), January 2006
 - Analytic geometry seminar (Rennes), January 2006
 - ANR project *Intégrabilité* meeting (ens Lyon), March 2006
- * *Equations différentielles linéaires paramètres d'après Cassidy-Singer et Landesman*
 - ANR project *Intégrabilité* meeting (Limoges), July 2006
- * *Réductibilité et Groupoïde de Galois d'une équation différentielle*
 - Geometry seminar (Bordeaux), June 2007
 - Differential Equations seminar (Strasbourg), January 2008
 - Galois Theories seminar (Lille), March 2008
- * *Galois pseudogroup & Applications to Reducibility and Integrability of differential equations*
 - Theoretical physic seminar (Toruń), April 2008
- * *The Galois pseudogroup of an integrable Hamiltonian*
 - Differential & difference seminar (Nagoya), June 2008
 - ANR project *Intégrabilité* meeting (Paris), Septembre 2008
 - Groups, Algebras and Geometry (Poitiers), May 2009
- * *About dicritical singularities of foliations of $(\mathbb{C}^2, 0)$*
 - Hamiltonian geometry seminar (Paris 6), February 2009
 - Singularities seminar (Marseilles), April 2009
 - Differential Equation seminar (Toulouse), October 2009
- * *Differential invariant of rational maps*
 - Groupe de travail différentiel (Paris 6), December 2009
- * *Galois pseudogroup of an ODE*
 - Séminaire groupes quantiques (Polytechnique), March 2010
- * *A q-Morales-Ramis Theorem*
 - Séminaire équations différentielles (Strasbourg) April 2010