

Curriculum Vitae

GINOUX Nicolas

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Associated member of the geometry group at *Institut Élie Cartan de Lorraine* (IECL) since 2015

Personal data: Born November 2nd, 1974 in Grenoble (France) / French / unmarried

Employment:

- 09/2014- : *PRAG* [professeur agrégé, lecturer] in mathematics at the department for computer science, IUT (*Institut Universitaire de Technologie*) of Metz, Université de Lorraine, Metz, France
- 10/2008 - 08/2014: *Akademischer Rat auf Zeit* [lecturer] in Bernd Ammann's group at the Universität Regensburg, Germany
- 10/2003 - 09/2008: Assistant in Christian Bär's group at the Universität Potsdam, Germany
- 04/2003 - 10/2003: Postdoc in Christian Bär's group at the Universität Hamburg, Germany
- 10/2002 - 03/2003: Postdoc at the Max-Planck Institut für Mathematik in den Naturwissenschaften, Leipzig (joint research with Hans-Bert Rademacher and Florin Belgun), Germany
- 09/1999 - 08/2002: A.T.E.R. [assistant], Université Henri Poincaré (UHP), Nancy, France
- 09/1998 - 08/1999: Training teacher, Lycée Louis Lapicque, Epinal, France

Visiting positions:

- Invited professor (one month), UHP, Nancy, 2009

Education:

- 2011-2014: **Habilitation thesis** in mathematics, Universität Regensburg, Germany
Subject: *Analysis on Kähler and Lorentzian manifolds*
Mentoren [Mentors]: Bernd Ammann, Gilles Carron, Paul Gauduchon
Referees: Helga Baum, Andrei Moroianu
- 1999-2002: **PhD thesis** in mathematics, UHP, Nancy
Subject: *Dirac operators on submanifolds*
Advisor: Oussama Hijazi
Jury: Paul Gauduchon (Pres.), Helga Baum (Ref.), Sebastián Montiel (Ref.), Gérard Besson, Bruno Colbois, Oussama Hijazi.
- 1998-1999: *Diplôme d'Études Approfondies* (master degree) in mathematics, UHP, Nancy; Master thesis on *Hermitian geometry and conformal spin geometry*
- 1997-1998: *Agrégation* in mathematics (graduate degree based on a nationwide competitive exam giving access to teaching positions in secondary and university systems), Université Joseph Fourier, Grenoble, France

Research:

- *Differential geometry*: geometry of submanifolds, of Kählerian, Riemannian and Lorentzian manifolds, of Riemannian foliations
- *Analysis on manifolds*: spectral geometry of Dirac-type operators, evolution equations
- *Mathematical physics*: quantum field theory

Publications and preprints:

• Articles:

- [23] Bernd Ammann and Nicolas Ginoux, *Some examples of Dirac-harmonic maps*, Lett. Math. Phys. **109** (2019), no. 5, 1205–1218
- [22] Nicolas Ginoux, Georges Habib and Ines Kath, *A splitting theorem for Riemannian manifolds of generalised Ricci-Hessian type*, submitted
- [21] Matthias Becker, Nicolas Ginoux, Sébastien Martin and Zsuzsanna Róka, *Tire Noise Optimization Problem: a Mixed Integer Linear Program Approach*, submitted

- [20] Nicolas Ginoux and Olaf Müller, *Global solvability of massless Dirac-Maxwell systems*, Ann. Inst. H. Poincaré Anal. Non Linéaire **35** (2018), no. 6, 1645–1654
- [19] Fida El Chami, Nicolas Ginoux, Georges Habib and Roger Nakad, *Rigidity results for Riemannian spin^c manifolds with foliated boundary*, Results in Math. **72** (2017), no. 4, 1773–1806
- [18] Fida El Chami, Nicolas Ginoux, Georges Habib and Roger Nakad, *Rigidity results for spin manifolds with foliated boundary*, J. Geom. **107** (2016), no. 3, 533–555
- [17] Nicolas Ginoux, *About the Lorentzian Yamabe problem*, Geom. Dedicata **174** (2015), 287–309
- [16] Nicolas Ginoux, Georges Habib and Simon Raulot, *A new upper bound for the Dirac operator on hypersurfaces*, Pacific J. Math. **278** (2015), no. 1, 79–101
- [15] Bernd Ammann and Nicolas Ginoux, *Dirac-harmonic maps from index theory*, Calc. Var. Part. Diff. Eq. **47** (2013), no. 3-4, 739–762
- [14] Christian Bär and Nicolas Ginoux, *Classical and quantum fields on Lorentzian manifolds*, in: C. Bär et al. (eds): “Global Differential Geometry”, Springer Proceedings in Mathematics **17** (2012), no. 2, 359–400
- [13] Nicolas Ginoux and Georges Habib, *The spectrum of the twisted Dirac operator on Kähler submanifolds of the complex projective space*, manuscripta math. **137** (2012), no. 1-2, 215–231
- [12] Nicolas Ginoux and Uwe Semmelmann, *Imaginary Kählerian Killing spinors I*, Ann. Glob. Anal. Geom. **40** (2011), no. 4, 467–495
- [11] Nicolas Ginoux and Jean-François Grosjean, *Almost harmonic spinors*, C. R. Math. Acad. Sci. Paris **348** (2010), no. 13-14, 811–814
- [10] Nicolas Ginoux and Georges Habib, *A spectral estimate for the Dirac operator on Riemannian flows*, Cent. Eur. J. Math. **8** (2010), no. 5, 950–965
- [9] Nicolas Ginoux and Georges Habib, *Remarques sur les spineurs de Killing transversaux*, C. R. Math. Acad. Sci. Paris **346** (2008), no. 11-12, 657–659
- [8] Nicolas Ginoux and Georges Habib, *Geometric aspects of transversal Killing spinors on Riemannian flows*, Abh. Math. Sem. Univ. Hamburg **78** (2008), 69–90
- [7] Nicolas Ginoux, *The spectrum of the Dirac operator on SU_2/Q_8* , manuscripta math. **125** (2008), no. 3, 383–409
- [6] Florin Belgun, Nicolas Ginoux and Hans-Bert Rademacher, *A singularity theorem for twistor-spinors*, Ann. Inst. Fourier **57** (2007), no. 4, 1135–1159
- [5] Nicolas Ginoux, *Dirac operators on Lagrangian submanifolds*, J. Geom. Phys. **52** (2004), no. 4, 480–498
- [4] Nicolas Ginoux, *Remarques sur le spectre de l’opérateur de Dirac*, C. R. Acad. Sci. Paris Sér. I **337** (2003), no. 1, 53–56
- [3] Nicolas Ginoux, *Une nouvelle estimation extrinsèque du spectre de l’opérateur de Dirac*, C. R. Acad. Sci. Paris Sér. I **336** (2003), no. 10, 829–832
- [2] Nicolas Ginoux, *Reilly-type spinorial inequalities*, Math. Z. **241** (2002), no. 3, 513–525
- [1] Nicolas Ginoux and Bertrand Morel, *On eigenvalue estimates for the submanifold Dirac operator*, Int. J. Math. **13** (2002), no. 5, 533–548

• **Books:**

- [B2] Nicolas Ginoux, *The Dirac spectrum*, Lecture Notes in Mathematics **1976** (2009), Springer
- [B1] Christian Bär, Nicolas Ginoux and Frank Pfäffle, *Wave equations on Lorentzian manifolds and quantization*, ESI Lectures in Mathematics and Physics (2007), EMS Publishing House

• Proceedings:

- [P4] Matthias Becker, Nicolas Ginoux, Sébastien Martin and Zsuzsanna Róka, *Optimization of Tire Noise by Solving an Integer Linear Program (ILP)*, in: 2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC 2016), October 9-12, 2016, Budapest
- [P3] Christian Bär and Nicolas Ginoux, *CCR- versus CAR-quantization on curved spacetimes*, in: F. Finster et al. (eds.): “Quantum Field Theory and Gravity”, Birkhäuser, 183–206, 2012
- [P2] Nicolas Ginoux, *Linear wave equations*, in: C. Bär et K. Fredenhagen (eds.): “Quantum field theory on curved spacetimes”, Lecture Notes in Physics **786** (2009), 59–84, Springer
- [P1] Nicolas Ginoux, *Reilly-type spinorial inequalities*, in: J.-P. Bourguignon et al. (eds.): “Dirac operators: Yesterday and Today”, 263–269, International Press, 2005

Recent talks, invitations and visits:

- Conference *Riemann and Kähler geometry*, Bucharest, 15-19/04/2019, co-organization and talk
- *Caractérisation de certaines variétés riemanniennes par une fonction dont la hessienne est proportionnelle au tenseur de Ricci*, Valenciennes, 01/04/2019
- *Nuisance sonore de pneumatiques et programmation linéaire en nombres entiers*, Dijon, 27/03/2019
- *Spineurs de type Killing en dimension 4*, Fanar, Beirut (Université Libanaise), 19/02/2019
- Invitation at University of Freiburg by Nadine Große, 24-26/09/2018
- *Une EDP à la Obata sur les variétés riemanniennes*, Nancy, 9/04/2018
- *About an Obata-like equation on Riemannian manifolds*, Esch-sur-Alzette, 19/03/2018
- *Sur certains spineurs de type Killing en dimension 4*, Tours, 26/01/2018
- Invitation at University of Greifswald by Ines Kath, 2-12/08/2017
- *Minimisation de la nuisance sonore de pneus par la programmation linéaire en nombres entiers*, ROADEF 2017, Metz, 23/02/2017
- Invitation at University of Stuttgart by Uwe Semmelmann, 20-22/02/2017
- *Application de la programmation linéaire en nombres entiers à la minimisation de la nuisance sonore de pneus*, LCOMS, Metz, 9/02/2017
- *QFT on curved spacetimes: from linear waves to bosonic or fermionic quantum fields*, Dijon, 18/01/2017
- *Manifolds with foliated boundary in Riemannian spin and spin^c geometries*, Regensburg, 10/01/2017
- Invitation and seminar talk at University of Freiburg by Nadine Große, 14-15/11/2016
- Invitation at University of Greifswald by Ines Kath, 5-12/08/2016
- Invitation at University of Stuttgart by Uwe Semmelmann, 18-22/07/2016
- Invitation at University of Greifswald by Ines Kath, 2-12/08/2015
- *A geometric characterization of product boundaries*, IECL, Metz, 18/06/2015
- *Quelques résultats de rigidité pour les variétés à bord feuilleté*, IECL, Nancy, 19/05/2015

Service:

1. Organization of conferences and research in pairs:

- “*Riemann and Kähler geometry*”, Bucharest, April 15-19, 2019
- MATH.en.JEANS Spring Congress, Metz, April 21-23, 2016

- “*Journées Nancéiennes de Géométrie 2016*”, Nancy, January 19-20, 2016
 - “*Spin geometry and analysis on manifolds*”, CIRM, October 6-10, 2014
 - “*Spectral geometry of the Dirac operator on hypersurfaces in spaceforms*” (Research in Pairs with Georges Habib), CIRM, 18/02-1/03/2013
2. Hiring committees: University of Regensburg, 2009/10 (assistants’ representative)
 3. PhD committees: C. Desmonts (Nancy, 2015)
 4. Reports for journals and various institutions
 5. Administration:
 - Member of the study evaluation committee at IUT de Metz, 2019-now
 - Deputy of the *commission doctorale* (PhD committee) at IECL, 2018-now
 - Faculty representative in charge of the management of marks at the department for computer science of the IUT of Metz, University of Lorraine, 2016-now
 - Faculty representative dealing with *TICE* (Information and Communication Technologies for Education) at University of Lorraine, 2015-now
 - Member of the faculty council of the department for computer science of the IUT of Metz, University of Lorraine, 2014-now
 - Deputy of the *commission de choix* (committee in charge of checking the faculty employment conditions at the IUT) of the IUT of Metz, University of Lorraine, 2014-now
 - Assistants’ representative at the faculty council of the University of Regensburg, 2010-2011
 - Mathematics PhD students’ representative at the *École Doctorale IAEM-Lorraine* (UHP), 2000-2002

Grants:

- *Mission de coopération scientifique 2018-2019* (travel and research grant) of the French-speaking University Association (AUF), Université Libanaise, Beirut, 17-24/02/2019
- Travel grant of the German Academic Exchange Service (DAAD), Université Libanaise, Beirut, 19-26/01/2014

Supervision:

- *Zulassungsarbeit* (bachelor thesis for training teachers) at Universität Regensburg :
 3. Philipp Schneider, *Zweidimensionale Pflasterungen*, (04/2014)
 2. Christian Schwarzkopf, *Klassifikation der zusammenhängenden geschlossenen topologischen Flächen* (04/-2015)
 1. Johanna Wutz, *Fuchs’sche Gruppen* (06/2013)

Recent teaching¹:

- 2018-2019: Basics of graph theory for second-semester Bachelor students in computer science at DFHI/ISFA-TES (in German)
- 2014-now: Mathematics for computer scientists: logics, Boolean calculus, linear algebra, calculus in one variable, graph theory, automata theory, probability theory, operations research; lectures and exercises
- 2014-now: Project tutorial
- Before 2014: linear algebra, calculus in one (real, complex) and several variables, geometry (affine, differential), algebraic topology; lectures, exercises and seminars

Others:

- Languages: French (native), English and German (fluent)

Metz, May 3, 2019

¹see <http://www.iecl.univ-lorraine.fr/~Nicolas.Ginoux/lehrarchiv.html> for a complete list