

## Curriculum vitae

Name : Guillaume TOMASINI  
Date and place of birth : August 28<sup>th</sup>, 1982 in Metz (France)  
Citizenship : French  
Email : tomasini(at)math.unistra.fr

### Education

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10/2006 – 06/2010 PhD at IRMA in Strasbourg under the supervision of Hubert RUBENTHALER, subject : *On some categories of weight modules and their restrictions to dual pairs*  
09/2003 – 06/2004, 09/2005 – 06/2006 Master of Mathematics, University Louis Pasteur, Strasbourg  
Memoir under the supervision of Gilles HALBOUT, *Quantization of Poisson algebras, after Maxim Kontsevitch*  
09/2004 – 06/2005 Agregation of mathematics ULP Strasbourg (rank : 63)

### Employment

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09/2011 – 08/2012 ATER (non-tenure Assistant Professor), University of Strasbourg  
03/2011 – 08/2011 Post-Doc, Max Planck Institut für Mathematik, Bonn  
09/2010 – 02/2011 Post-Doc, University of Aarhus  
10/2009 – 08/2010 ATER (non-tenure Assistant Professor), University of Strasbourg  
10/2006 – 09/2009 Moniteur (teaching assistant), University Louis Pasteur, Strasbourg

### Grants and awards

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10/2004 – 09/2007 Full PhD Scholarship, University Louis Pasteur, Strasbourg  
2003 Agregation of mathematics

### Stays in research center

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02/2012 Uppsala, Sweden  
01/2012 RUB, Bochum, Germany  
07/2007 Max Planck Institut (MPIM) and Hausdorff Institut (HIM), Bonn, Germany

### Research

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- **Publications and Pre-Publications**

- ▶ *Integrability of weight modules of degree 1*, to appear in *J. of Lie Theory*
- ▷ *A generalisation of the category  $\mathcal{O}$  of Bernstein–Gelfand–Gelfand*, *Comptes rendus - Mathématique* 348 (2010), pp. 509-512
- ▷ *Unitary representation of the universal cover of  $SU(1,1)$  and their tensor products*, preprint arXiv:1102.0374
- ▷ *Restriction to Levi subalgebras and generalization of the category  $\mathcal{O}$* , preprint arXiv:1010.1347
- ▷ *A Howe–type correspondence for the dual pair  $(\mathfrak{sl}_2, \mathfrak{sl}_n)$  in  $\mathfrak{sl}_{2n}$* , preprint arXiv:0911.5210
- ▷ *Étude de certaines catégories de modules de poids et de leurs restrictions à des paires duales*, Ph.D. thesis, tel-00485655

- **Fields of interest** Lie Algebras, Representation Theory, Dual Pairs, Weight modules, Generalized Harish–Chandra modules, Branching Rules, Unitary representations of reductive real Lie groups, Harmonic analysis.

- **Talks given**

- 02/2012 *Dual pair correspondences for weight modules*, Algebra and Geometry seminar, Uppsala
- 01/2012 *Unitary representations of the universal cover of  $SU(1,1)$* , Analysis seminar, Bochum
- 10/2011 *Restriction de représentations à des sous-algèbres de Levi*, Envelopping algebra seminar, Paris
- 09/2011 *Restriction of weight modules to Levi subalgebras*, Algebraic representation theory, Uppsala
- 06/2011 *Integrability of modules of degree 1*, Noncommutative harmonic analysis and representation theory, University of Luxembourg
- 03/2011 *Restricting weight modules*, seminar in Bremen.
- 02/2011 *Unitary representation of the universal cover of  $SU(1,1)$  and their tensor products*, seminar in Aarhus.
- 01/2011 *On degree 1 modules*, Colloque Tournant du GDR 3066, University of Poitiers.
- 12/2010 *On degree 1 modules*, seminar in Metz.
- 12/2010 *On degree 1 modules*, seminar in Strasbourg.
- 06/2010 *Howe Correspondences for some degree 1 modules*, seminar in Nancy.
- 06/2010 *On some categories of weight modules and their restrictions to dual pairs*, Ph.D. defense, University of Strasbourg.
- 03/2010 *Cuspidal modules*, Journées MNRS, University of Strasbourg.
- 08/2009 *On a generalisation of BGG category  $\mathcal{O}$* , Summer school "Structures in Lie theory", Jacobs University, Bremen, Germany.
- 03/2009 *Restriction of representations to Levi subalgebras and  $\mathcal{O}$ -categories*, Journées MNRS, University of Reims.

- **Participations at conferences and schools**

- 04/2012 *Théorie de Lie et analogues quantiques*, Luminy
- 02/2012 *Sophus Lie Seminar*, Reims
- 01/2012 *Lie groups: Structure, Actions, and Representations*, Bochum
- 10/2011 *Journées LMNRS*, Strasbourg
- 09/2011 *Algebraic representation theory*, Uppsala
- 06/2011 *Noncommutative harmonic analysis and representation theory*, Luxembourg
- 01/2011 *Topics in Representation Theory*, HIM, Bonn.
- 01/2011 *Colloque Tournant du GDR 3066*, Poitiers University.
- 06/2010 *Journées MNRS*, Nancy University.
- 03/2010 *Journées MNRS*, Strasbourg University.

- 08/2009 *Structures in Lie theory*, Jacobs University, Bremen.
- 07/2009 *Computational Theory of Real Reductive Groups*, University of Utah, Salt Lake City.
- 06/2009 *Rencontre entre physiciens théoriciens et mathématiciens : Representation theory in Mathematics and in Physics*, Strasbourg University.
- 03/2009 *Journées MNRS*, Reims University.
- 12/2008 *Representations of Lie groups and applications*, IHP, Paris.
- 11/2008 *Journées MNRS*, Strasbourg University.
- 06/2008 *Hermitian symmetric spaces, Jordan algebras, and related problems*, CIRM, Luminy.
- 03/2008 *GL<sub>2</sub>*, CIRM, Luminy.
- 07/2007 *Representation theory, complex analysis, and integral geometry*, Max Planck Institut, Bonn.
- 06/2007 *Journées MNRS*, Nancy University.
- 06/2007 *Rencontre entre physiciens théoriciens et mathématiciens : Supersymmetry and integrability*, Strasbourg University.
- 12/2006 *Geometry and representations*, CIRM, Marseille.
- 09/2006 *Representation theory and prehomogeneous vector spaces*, Strasbourg University.
- 05/2006 *Journées MNRS*, Strasbourg University.

• **PhD courses attended**

- 2008/2009 *Algèbres de Hecke*, by Christian KASSEL.
- 2008/2009 *Introduction à la théorie des représentations*, by Pierre BAUMANN.
- 2007/2008 *Introduction à la géométrie algébrique*, by Olivier DEBARRE.
- 2006/2007 *Automates cellulaires et théorie des groupes*, by Michel COORNAERT.
- 2005/2006 *Représentation de plus haut poids des algèbres de Lie admettant une décomposition triangulaire*, by Hubert RUBENTHALER.
- 2005/2006 *Groupes quantiques*, by Benjamin ENRIQUEZ.
- 2005/2006 *Quantification des variétés de Poisson*, by Gilles HALBOUT.
- 2005/2006 *Géométrie riemannienne, analyse sur les variétés métriques d'Einstein*, by Olivier BIQUARD.

## Teaching

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- 09/2011 – 12/2011 Lectures and Exercises session, *Algèbre Linéaire*, L1 Math-Eco
- 09/2011 – 12/2011 Lectures and Exercises session, *Analyse réelle d'une variable*, L1 Physique et Science de l'Ingénieur
- 09/2009 – 03/2010 Exercises session, Analysis, *TD de préparation aux écrits*, Préparation au CAPES de mathématiques.
- 09/2009 – 03/2010 Exercises session, Algebra and Geometry, *TD de préparation aux écrits*, Préparation au CAPES de mathématiques.
- 09/2008 – 03/2009 Exercises session, Analysis, *TD de préparation aux écrits*, Préparation au CAPES de mathématiques.
- 01/2009 Problem "Mathématiques Générales" 1992, *Préparation aux écrits*, Préparation à l'AGREGATION de mathématiques.
- 09/2007 – 12/2007 Lectures and Exercises session, *Analyse réelle d'une variable*, L1 Physique et Applications.
- 09/2006 – 12/2006 Lectures and Exercises session, *Analyse réelle d'une variable*, L1 Chimie.

## Popularizing actions and Administrative tasks

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- 2008– I was the principal coordinator for the book "A quoi servent les mathématiques", involving 20 authors. The book is about the interaction of mathematics with other disciplines (e.g. astrophysics, economics, art, music) and should be published soon.
- 2008 Co-author of the chapter "L'Univers mathématique" (how mathematics and astrophysics interact) to be published in the book "A quoi servent les mathématiques".
- 09/2007 – 06/2010 Organizer of the junior seminar of Strasbourg (about 20 talks a year).
- 09/2007 Co-organizer of the conference for the celebration of the 20<sup>th</sup> birthday of the Magistère of Mathematics of Strasbourg, 3 days.