

## Jérémie GUILHOT

- born on the 5th of january 1980 in Chambéry, France
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### PROFESSIONAL EXPERIENCE AND EDUCATION

- **2011/2018** : Lecturer at the Laboratoire de Mathématiques et Physique Théorique, Université François Rabelais de Tours
- **2009/2011** : Lecturer at the School of Mathematics, University of East Anglia, Norwich
- **2008/2009** : Research fellow under the supervision of Andrew Mathas and Robert Howlett, University of Sydney
- **2004/2008** : Co-supervised PhD in Mathematics at the University of Aberdeen and Université Claude Bernard Lyon 1

**Thesis title** : “*Kazhdan-Lusztig cells in affine Weyl groups with unequal parameters*”

**Supervisors** :

M. Meinolf Geck, University of Aberdeen

M. Philippe Caldéro, Université Claude Bernard Lyon 1

**Members of the jury**

Mme. Kessar Radha

M. Cédric Bonnafé

M. Philippe Caldéro

Meinolf Geck

M Iain Gordon

M. Kenji Iohara

The thesis is available online :

<http://tel.archives-ouvertes.fr/tel-00300796/fr/>

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## SCIENTIFIC ACTIVITIES

### Grant and Project

- **2014–2016** Manager with Kilian Raschel of the regional project entitled “Random walks and Dunkl process : combinatorial and algebraic approaches” (project MADACA)  
<http://www.fdpoisson.fr/madaca/index-eng.html>
- **2012–2016** Member of the ANR project ACORT  
<http://njacon.perso.math.cnrs.fr/acort.html>

### Organisation of conferences

- **2016** Conference “Representation Theory of Finite and  $p$ -adic Groups of Lie Type” at the CIRM in november  
<http://scientific-events.weebly.com/1504.html>
- **2016** Final conference of the regional project MADACA at the Domaine de Chales in june  
<http://www.fdpoisson.fr/madaca/conference.html>
- **2016** Winter school on random walks and Dunkl process in Tours in january.  
<http://www.fdpoisson.fr/madaca/ecole-hiver.html>
- **2013** Workshop of the ANR ACORT in Tours in july  
<http://www.lmpt.univ-tours.fr/~guilhot/combin.html>

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## LIST OF PUBLICATIONS

### • Publications in scientific journals

- (1) *On the determination of Kazhdan-Lusztig cells for affine Weyl groups with unequal parameters*, Journal of Algebra 318 (2007), no. 2, pp 893–917.
- (2) *On the lowest two-sided cell in affine Weyl groups*, Representation Theory 12 (2008), 327-345.
- (3) *Generalized induction of Kazhdan-Lusztig cells*, Annales de l’Institut Fourier, 2009, 59 (4), pp.1385-1412
- (4) *Kazhdan-Lusztig cells in affine Weyl groups of rank 2*, Int. Math. Res. Not. IMRN 2010, no. 17, 2010
- (5) *Affine cellularity of Hecke algebras of rank 2*, in collaboration with V. Miemietz Math. Zeit. 271 373-397 (2012).
- (6) *Cellularity of the lowest two-sided ideal of an affine Hecke algebra*, Adv. in Math. 255 525-561 (2014).
- (7) *Ordering families using Lusztig’s symbols in type B : the integer case*, in collaboration with Nicolas Jacon, Journal of Algebraic Combinatorics 41 157-183 (2015).
- (8) *Isomorphic induced modules and Dynkin diagram automorphisms of semisimple Lie algebras*, in collaboration with Cédric Lecouvey, Glasgow Math. Journal 58 187-203 (2016).

• **Publications in préparation**

- (9) *Asymptotic lowest two-sided cell*, in collaboration with C. Bonnafé, available at <http://arxiv.org/abs/1103.4025>
- (10) *Admissible subsets and Littelmann paths in affine Kazhdan-Lusztig theory*, available at <https://arxiv.org/abs/1606.05542>
- (11) *A proof of Lusztig's conjectures for affine type  $G_2$  with arbitrary parameters*, in collaboration with James Parkinson, available at <https://arxiv.org/abs/1711.06551>
- (12) *Balanced representations, the asymptotic Plancherel formula, and Lusztig's conjectures for  $\tilde{C}_2$* , in collaboration with James Parkinson, available at <https://arxiv.org/abs/1803.11067>

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**SOME TALKS**

- **Kazhdan-Lusztig theory and Littelmann paths**, Algebra seminar in Lyon, april 2017
- **Cellule bilatère minimale dans un groupe de Weyl affine**, Algebra seminar in Reims, march 2016
- **Kazhdan-Lusztig Cells in (Affine) Weyl Groups**, Algebra seminar in Norwich, june 2015
- **Bases cellulaires dans les algèbres de Hecke affines**, Chevalley seminar, Paris VII, october 2014
- **Cellularity of the lowest two-sided ideal of an affine Hecke algebra**, Conference “Groups, Nonassociative Algebras and Combinatorics”, CIRM, september 2013
- **Cellules de Kazhdan-Lusztig dans les groupes de Weyl affines**, days of the GDR Lie Theory, Mulhouse, june 2013

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**INVITATIONS**

• **Invitations**

- Invited from the 10th to the 22nd of december 2016 at the University of Sydney by James Parkinson
- Participation to the special semestre “Automorphic Forms, Combinatorial Representation Theory and Multiple Dirichlet Series” in ICERM in 2013
- Invited from the 11th to the 15th of june 2012 at the University of Franche-Comté by Nicolas Jacon
- Research in pairs in the CIRM form the 2nd to the 13th of July 2012 on tensor products of irreducible representations of Lie algebras and Kac-Moody algebras.