

CURRICULUM VITAE

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EMPLOYMENT

02/2015 – 05/2015 Post-doc at Institut Mittag-Leffler, Sweden, for the program Representation Theory.
10/2014 – 01/2015 Guest researcher at Instituto Superior Técnico of Lisbon, Portugal.
10/2012 – 09/2014 Post-doc at Uppsala Universitet, Sweden.
09/2010 – 08/2012 Post-doc at the Instituto Superior Técnico of Lisbon, Portugal.
10/2009 – 08/2010 ATER (non-tenure Assistant Professor) at the Université de Strasbourg, France.
10/2006 – 09/2009 Allocataire de recherche (full PhD Scholarship) and moniteur (Teaching Assistant) at the Université de Strasbourg, France.

EDUCATION

10/2006 – 06/2010 PhD at the IRMA in Strasbourg under the supervision of Christian Kassel.
Thesis defended on June 2010, entitled *Groupes de tresses et catégorification (Braid groups and categorification)* (tel-00491753).
Committee members: Christian Blanchet (reviewer), Benjamin Enriquez (examiner), Christian Kassel (supervisor), Luis Paris (examiner), Catharina Stroppel (reviewer).
09/2005 – 06/2006 Master 2 of Mathematics, Université Louis Pasteur, Strasbourg.
Masterthesis under the supervision of Christian Kassel, entitled *On Khovanov-Rozansky homology of two bridge knots and links*.
09/2004 – 06/2005 Agregation of mathematics.
09/2002 – 06/2006 Magistère of mathematics, Université Louis Pasteur, Strasbourg.

RESEARCH

- **Fields of interest:** Categorification, knot theory, Khovanov homology, Artin groups, Hecke algebras, quantum Schur algebras, virtual braids, virtual and welded knot theory.

- **(Pre-)publications:**

- Published**

- ★ *Categorification of the virtual braid groups*
Annales Mathématiques Blaise Pascal, 18(2):231–243, 2011.
 - ★ *Virtual braid groups of type B and weak categorification*
Journal of Knot Theory and its Ramifications, 21(2):1250020–21 pages, 2012.

- Accepted**

- ★ *Categorifications of the extended affine Hecke algebra and affine q -Schur algebra $\hat{\mathbf{S}}(n, r)$ for $3 \leq r < n$*
to appear in Quantum Topology
in collaboration with Marco Mackaay
arxiv math.QA/1302.3102
 - ★ *A diagrammatic categorification of the affine q -Schur algebra $\hat{\mathbf{S}}(n, n)$ for $n \geq 3$*
to appear in Pacific Journal of Mathematics
in collaboration with Marco Mackaay
arxiv math.QA/1312.5958

Submitted

- ★ *Categorical action of the extended braid group of affine type A*
in collaboration with Agnès Gaddbled and Emmanuel Wagner
arxiv math.GT/1504.07596

Note

- ★ *Two diagrammatic descriptions of the extended Soergel category of affine type A*
available here: <http://www2.math.uu.se/~thiel/NoteDEBIM.pdf>

• Talks given:**★ Invited speaker at conferences:**

- 02/2015 *Categorical action of the extended braid group of affine type A*, Introductory Workshop satellite of the Representation Theory program at the Institute Mittag-Leffler, Uppsala.
- 09/2014 *Diagrammatic categorification*, Workshop on Diagram Algebras, Stuttgart.
- 01/2014 *Diagrammatic categorification*, Conference “Algebra and computations”, Lyon.
- 04/2012 *Categorification of extended Hecke algebra and q -Schur algebra of affine type A*, conference “Lie Theory and quantum analogues”, CIRM Marseille.
- 01/2011 *Catégorification des groupes de tresses virtuelles*, Colloque Tournant - GDR Géométrie, Dynamique et Représentations des Groupes, Poitiers.

★ Conferences:

- 09/2012 *Categorification of virtual braid groups*, Conference “Lie algebras and applications”, Uppsala.
- 06/2012 *Categorification of virtual braid groups*, Workshop ANR VasKho, Caen.
- 10/2009 *Categorification of the singular braid monoids and of the virtual braid groups*, conference “Braids in Pau” - GDR Tresses et Topologie de basse dimension, Pau.

★ Seminars:

- 02/2015 *Catégorification diagrammatique*, Quantum seminar, Institut de Recherche Mathématique Avancée, Strasbourg.
- 03/2014 *Catégorification diagrammatique*, Algebra, dynamics and topology seminar, Laboratoire d'Analyse, Topologie, Probabilités, Marseille.
- 02/2014 *Diagrammatic categorification of extended Hecke algebra and quantum Schur algebra of affine type A*, seminar, Centre for Quantum Geometry of Moduli spaces, Aarhus.
- 01/2014 *Diagrammatic categorification*, Algebra, combinatorics and number theory seminar, Centro de Matemática da Universidade do Porto, Porto.
- 02/2013 *Categorification of extended Hecke algebra and quantum Schur algebra of affine type A*, Algebra and geometry seminar, Uppsala Universitet, Uppsala.
- 05/2012 *Diagrammatic categorification of extended Hecke algebra and quantum Schur algebra of affine type A*, Topological quantum field theory seminar, Instituto Superior Técnico, Lisbon.
- 04/2012 *Catégorification des groupes de tresses virtuelles*, Algebra, dynamics and topology seminar, Laboratoire d'Analyse, Topologie, Probabilités, Marseille.
- 11/2011 *Catégorification des groupes de tresses virtuelles*, Topology seminar, Laboratoire Paul Painlevé, Lille.
- 01/2011 *Catégorification des groupes de tresses virtuelles*, Algebraic topology seminar, Laboratoire Analyse, Géométrie et Applications, Villetaneuse.
- 10/2010 *Catégorification des tresses singulières et des tresses virtuelles*, Topologie, geometry et algebra seminar, Laboratoire Jean Leray, Nantes.
- 10/2010 *Categorification of singular braid monoids and of virtual braid groups*, Topological quantum field theory seminar, Instituto Superior Técnico, Lisbon.
- 05/2010 *Catégorification des tresses singulières et des tresses virtuelles*, Algebra and geometry seminar, Laboratoire de Mathématiques Nicolas Oresme, Caen.
- 04/2010 *Tresses virtuelles de type A et B et catégorification*, Lie groups and harmonic analysis seminar, Institut Elie Cartan, Nancy.
- 03/2010 *Catégorification des tresses singulières et des tresses virtuelles*, Topology seminar, Institut Fourier, Grenoble.
- 03/2010 *Catégorification des tresses singulières et des tresses virtuelles*, Knot theory seminar, Unige, Genève.

- 02/2010 *Catégorification des tresses singulières et des tresses virtuelles*, Algebra, geometry and topology seminar, Institut de Mathématiques de Bourgogne, Dijon.
- 02/2010 *Tresses virtuelles de type B et catégorification*, Quantum seminar, Institut de Recherche Mathématique Avancée, Strasbourg.
- 01/2010 *Catégorification des tresses singulières et des tresses virtuelles*, Topology seminar, Institut de Mathématiques de Jussieu, Paris.
- 01/2010 *Catégorification des tresses singulières et des tresses virtuelles*, Analysis, geometry and algebra seminar, Laboratoire de Mathématiques et Applications de Metz, Metz.
- 10/2009 *Catégorification des tresses singulières et des tresses virtuelles*, Quantum seminar, Institut de Recherche Mathématique Avancée, Strasbourg.

★ **Working seminars and miscellaneous:**

- 06/2014 *Examples of Gabriel 2-quivers*, 2-seminar, Uppsala.
- 11/2011 *On Bar-Natan and Dancso's paper "Finite type invariants of w-knotted objects: from Alexander to Kashiwara and Vergne"*, Workshop ANR VasKho, Caen.
- 05/2010 *Homologie de Khovanov*, Junior seminar, Institut de Recherche Mathématique Avancée, Strasbourg.
- 12/2009 *Complexes de chaînes, homologie*, Working seminar on homological algebra, Institut de Recherche Mathématique Avancée, Strasbourg.
- 04/2008 *Homologie de Khovanov*, Junior seminar, Institut de Mathématiques de Bourgogne, Dijon.
- 11/2007 *Solutions de l'équation du pentagone d'après Kashaev et Reshetikhin*, Quantum seminar, Institut de Recherche Mathématique Avancée, Strasbourg.
- 04/2007 *Homologie de Hochschild*, Junior seminar, Institut de Recherche Mathématique Avancée, Strasbourg.

● **Participations at conferences and schools:**

- 06/2015 *AMS-EMS-SPM international joint meeting*, Porto, 4 days.
- 05/2015 *Representation Theory Workshop*, satellite of the Representation Theory program at the Institute Mittag-Leffler, Uppsala, 3 days.
- 02/2015 *Introductory Workshop*, satellite of the Representation Theory program at the Institute Mittag-Leffler, Uppsala, 3 days.
- 09/2014 *Workshop on Diagram Algebras*, Stuttgart, one week.
- 06/2014 *Geometric and Quantum Topology in dimension 3*, CIRM Marseille, one week.
- 03/2014 *Algebra days: categorification and knot invariants*, Caen, 2 days.
- 01/2014 *Conference Algebra and computations*, Lyon, one week.
- 06/2013 *Essén Lectures - The symmetric group: its combinatorics, representations and applications*, Uppsala, 4 days.
- 03/2013 *Master class Soergel bimodules and Kazhdan-Lusztig conjectures*, Aarhus, one week.
- 12/2012 *Winter School Winter Braids III*, Grenoble, 4 days.
- 09/2012 *Conference Lie algebras and applications*, Uppsala, 3 days.
- 06/2012 *Main Workshop ANR VasKho, On Bar-Natan and Dancso's paper "Finite type invariants of w-knotted objects: from Alexander to Kashiwara and Vergne"*, Caen, 9 days.
- 04/2012 *Conference Lie Theory and quantum analogues*, CIRM Marseille, one week.
- 03/2012 *Second Workshop ANR VasKho, On Bar-Natan and Dancso's paper "Finite type invariants of w-knotted objects: from Alexander to Kashiwara and Vergne"*, Caen, 3 days.
- 11/2011 *First Workshop ANR VasKho, On Bar-Natan and Dancso's paper "Finite type invariants of w-knotted objects: from Alexander to Kashiwara and Vergne"*, Caen, 3 days.
- 09/2011 *Quantum groups, categorification and braids*, Strasbourg, 3 days.
- 06/2011 *Braids in Seville*, Seville, one week.
- 01/2011 *Colloque Tournant - GDR Géométrie, Dynamique et Représentations des Groupes*, Poitiers, 3 days.
- 09/2010 *Singularités, nœuds et groupes de difféotopies*, Dijon, 4 days.
- 07/2010 *Oporto Meeting on Geometry, Topology and Physics: Categorification*, Faro, one week.
- 04/2010 *Topologie algébrique et quantique*, CIRM Marseille, one week.
- 03/2010 *Colloque Groupes d'Artin-Tits, automorphismes et autres questions liées*, Dijon, 2 days.

- 11/2009 *9ième forum des jeunes mathématiciennes à l'IHP*, Paris, 2 days.
10/2009 *GDR Tresses et Topologie de Basse Dimension, Braids in Pau*, Pau, 4 days.
09/2009 *84ième RCP : Topologie quantique et théorie de Chern-Simons*, Strasbourg, 3 days.
07/2009 *Summer school Link Homology*, Paris, one week.
06/2009 *83ième RCP : Théorie des représentations en mathématique et en physique*, Strasbourg, 3 days.
05/2009 *Conference on Knot Theory and its applications to Physics and Biology*, ICTP Trieste, one week.
04/2009 *Master-class de géométrie*, Strasbourg, one week.
04/2009 *Introductory Workshop and Workshop on Categorification and Geometrisation from Representation Theory*, Glasgow, one week.
03/2009 *Swiss Knots*, Fribourg, 3 days.
11/2008 *Séminaire d'algèbre Besançon Dijon, Bimodules de Særgel*, Besançon, one day.
09/2008 *GDR Tresses et Topologie de Basse Dimension, Tresses à Paris*, Paris, 4 days.
06/2008 *GDR Tresses et Topologie de Basse Dimension, Tresses, nœuds et applications*, Montpellier, 3 days.
02/2008 *Journée Géométrie, Topologie et Physique : Invariants par somme d'état des 3 et 4 variétés*, Strasbourg, one day.
02/2008 *Journées Groupes Quantiques*, IRMA, Strasbourg, 3 days.
12/2007 *Journée Géométrie, Topologie et Physique : Gravité quantique, Loop Quantum Gravity*, Strasbourg, one day.
09/2007 *Journées ANR sur la Conjecture du Volume*, Strasbourg, 3 days.
07/2007 *Oporto Meeting on Geometry, Topology and Physics*, Faro, 5 days.
09/2006 *GDR Tresses et Topologie de Basse Dimension*, Clermont-Ferrand, 4 days.
06/2006 *Knots and physics*, Strasbourg, 4 days.
05/2006 *Groupes quantiques et quantification par déformation*, Strasbourg, 4 days.

• **PhD courses attended:**

- 2012 – 2013 *Geometrical methods in theoretical physics*, Maxim Zabzine, one semester.
2008 – 2009 *Algèbres de Hecke et applications*, Christian Kassel, one semester.
Introduction à la théorie des représentations, Pierre Baumann, one semester.
2007 – 2008 *Introduction à la géométrie algébrique*, Olivier Debarre, one semester.
2005 – 2006 *Représentation de plus haut poids des algèbres de Lie admettant une décomposition triangulaire*, Hubert Rubenthaler, one semester.
Groupes quantiques et foncteurs de quantification, Quantification des variétés de Poisson, Associateurs et valeurs spéciales de polylogarithmes, Benjamin Enriquez and Gilles Halbout, 2 semesters.
Géométrie riemannienne, analyse sur les variétés métriques d'Einstein, Olivier Biquard, 2 semesters.

TEACHING

- 01/2014 – 03/2014 *Exercice session, Linear algebra II*, 2nd year of Informatics, second semester (20h).
09/2013 – 10/2013 *Exercice session, Linear algebra II*, 2nd year of Molecular biology and of Material physics, first semester (40h).
01/2013 – 03/2013 *Exercice session, Linear algebra II*, 2nd year of Environmental engineering, second semester (20h).

These linear algebra exercise sessions are about: vector spaces, normed vector spaces, dimension, (change of) basis, orthogonality, Gram-Schmidt process, linear transformations (kernel, image, ...), Gaussian elimination, symmetric and orthogonal matrices, (orthogonal) diagonalization, quadratic forms, conics, quadrics.

- 09/2009 – 01/2010 *Cours intégré : Rappels de mathématiques* (Lecture and exercises), L1 Sciences du vivant, first semester (90h).
09/2008 – 01/2009 *Cours intégré : Rappels de mathématiques* (Lecture and exercises), L1 Sciences du vivant, first semester (68h).

09/2007 – 01/2008 *Cours intégré : Rappels de mathématiques* (Lecture and exercises), L1 Sciences du vivant, first semester (68h).

09/2006 – 01/2007 *Cours intégré : Rappels de mathématiques* (Lecture and exercises), L1 Sciences du vivant, first semester (23h).

This course consists in lectures and exercise sessions graded by tests during the semester and a final exam at the end of the semester. It is a calculus course covering the following notions: functions, composition, limits, continuity, differentiability, variations, graphs, integrability, usual functions, (hyperbolic) trigonometric functions and their inverse, complex numbers.

09/2006 – 01/2007 Exercise session, *Géométrie 3D*, L2 mathématiques, first semester (39h).

The contents of these exercise sessions of geometry are: vector and affine spaces, barycenters, coordinate systems, orthogonality, projections, distances, scalar and vector products, angles, cartesian and parametric equations, sphere.

ORGANIZATION OF CONFERENCES AND ADMINISTRATIVE TASKS

Referee for peer-reviewed journals.

02 – 05/2015 Organizer of the "Tell us about" seminar at the Mittag-Leffler Institute.

09/2007 Co-organizer of a conference for the celebration of the 20th birthday of the Magistère of Mathematics of Strasbourg, *Colloque Interdisciplinaire à l'occasion des 20 ans du Magistère de Mathématiques de Strasbourg*, 3 days, link: <http://www-magistere.u-strasbg.fr/spip.php?rubrique20>

POPULARIZING ACTIONS

03/2015 Popularization talk for a group of highschool students visiting the Mittag-Leffler Institute, *Knots and braids*.

11/2008 Participation to the Sciencefest, *Europe*.

10/2007 Participation to the Sciencefest, *Mathématiques célestes, satellites et toupies*.

LANGUAGES

- French: mother tongue
- English: fluent
- German: advanced