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General Informations

Nationality: French.
Date of birth: 1982-01-26.
Situation: Married, no children.
Employment: Postdoc at the University Paris 7, France.

Research areas

- Cluster algebras (categorifications, geometrisations) and their interactions ;
- Representation theory of finite dimensional algebras ;
- Geometric methods ;
- Algebraic combinatorics.

Qualifications

2011-2012: Postdoc ANR *Géométrie Tropicale et Algèbres Amassées*, University Paris 7 (France).
Supervised by: Bernhard Keller.
2009-2011: Postdoc CRM-ISM, University of Sherbrooke (Canada).
Supervised by: Ibrahim Assem, Thomas Brüstle, Virginie Charette.
2008-2009: Temporary Teaching and Research Assistant (ATER), University Lyon 1 (France).
2007: Liegrits predoc at the NTNU (Trondheim, Norway).
Supervised by: Idun Reiten.
2005-2008: PhD at Claude Bernard University Lyon 1 (Lyon, France).
Supervised by: Philippe Caldero.
2005-2008: Teaching and Research Assistant (Allocataire-Moniteur), University Lyon 1 (France).
2004-2005: Master degree at Claude Bernard University Lyon 1
2004 : Teaching qualifications (Agrégation, rank: 81)

Teachings

2008-2009: Undergraduate teachings at the University of Lyon
2006-2007: Undergraduate teaching at the University Institute of Technology of Lyon
2005-2008: Undergraduate teachings at the University of Lyon

Students

2010: Jean-Philippe Burelle, ISM funded Research Training, University of Sherbrooke.
 Memoir : *Algèbres Amassées Quantiques de type A*.

Other administrative duties

- 2011-:** Organizer of the *Calabi Yau Working Group* at the University of Sherbrooke.
2010: Organizer of the *Cluster Algebras Working Group* at the University of Sherbrooke.
2010: Organizer of the *Deformation Theory Working Group* at the University of Sherbrooke.

Other mathematical activities

1. Peer reviews for:

- International Mathematics Research Notices ;
- Proceedings of the London Mathematical Society ;
- Journal of Algebra ;
- Algebras and Representation Theory ;
- Annals of Combinatorics.

2. Reviews for:

- MathSciNet.

Grants and awards

- 2009-2011:** ANR GTAA postdoctoral fellowship.
2010-2011: *Tomlinson Visiting Scholarship* from Bishop's University.
2009-2011: CRM-ISM postdoctoral fellowship.
2007: Liegrits predoctoral fellowship

List of publications

1. (joint with G. Cerulli and F. Esposito) *A Homological Interpretation of the Transverse Quiver Grassmannians*, to appear in *Algebras & Representation Theory*.
2. *Positivity for Regular Cluster Characters in Acyclic Cluster Algebras*, to appear in *Journal of Algebra and its Applications*.
3. (joint with I. Assem, R. Schiffler and D. Smith) *Friezes, Strings and Cluster Variables*, *Glasgow Mathematical Journal*, to appear.
4. *Generic Cluster Characters*, *International Mathematics Research Notices IMRN*, RNR024, 2011.
5. (joint with I. Assem) *Friezes and a Construction of the Euclidean Cluster Variables*, *Journal of Pure and Applied Algebra*, in press.
6. *Generic Variables in Acyclic Cluster Algebras*, *Journal of Pure and Applied Algebra*, **215**(4), 628–641, 2011.
7. *Transverse Quiver Grassmannians and Bases in Affine Cluster Algebras*, *Algebra and Number Theory*, **4**(5), 599–624, 2010.
8. *Quantized Chebyshev Polynomials and Cluster Characters with Coefficients*, *Journal of Algebraic Combinatorics*, **31**(4), 501–532, 2010.
9. *Positivity in Coefficient-Free Rank Two Cluster Algebras*, *Electronic Journal of Combinatorics*, **16**(1), R98, 2009.
10. *Cluster Multiplication in Stable Tubes via Generalized Chebyshev Polynomials*, *Algebras and Representation Theory*, to appear.
11. *Caldero-Keller Approach to the Denominators of Cluster Variables*, *Communications in Algebra*, **38**(7), 2538–2549, 2010.
12. *An Approach to Non-Simply-Laced Cluster Algebras*, *Journal of Algebra*, **320**(4), 1626–1661, 2008.

Preprints

1. (joint with H. Thomas) *Atomic Bases in Cluster Algebras of Types A and \tilde{A}* , arXiv:1106.3758 [math.RA].
2. (joint with F. Palési) *Quasi-Cluster Algebras from Non-Orientable Surfaces*, arXiv:1105.1560 [math.RA].

Computer Programs

1. (with M. Pérotin, Laboratoire d'Informatique de Tours / R.D. Bull France) Development of the *Quiver Mutation Explorer (QME)* for computing mutation classes of quivers.

Other works

1. *Mutations de carquois*, Cahiers Mathématiques de l'Université de Sherbrooke, 1, 99–117, 2010.
2. *Éléments de déformations algébriques*, Rapports de l'université de Sherbrooke, n° 93, septembre 2010.
3. *Algèbres amassées affines*, PhD thesis, november 2008.
4. *Algèbres cluster de type fini et représentations de carquois*, Rapports de l'université de Sherbrooke, n° 20, juin 2005.

Research stays

- 2011** : Fields Institute from january 23d to january 26th, Toronto ON, Canada.
2010 : University of Connecticut from november 15th to november 19th, Storrs CT, USA.
University of Bonn from may 21th to may 25th, Bonn, Germany.
University of New Brunswick from february 20th to february 25th, Fredericton, Canada.
2009 : University of Padova from june 8th to june 11th, Padova, Italy.
2008 : Université Paris 7 from november 12th to november 15th, Paris, France.
2007 : 3 months (october-december) as a Liegrits predoc in NTNU, Trondheim, Norway.

Talks in international conferences

- *Positivity in Cluster Algebras of Dynkin type A and affine type A*, Maurice Auslander Distinguished Lectures and International Conference, (Woods Hole MA, USA), april 2011.
- *Cluster Bases in Cluster Algebras*, Combinatorial Algebra meets Algebraic Combinatorics, (Thunder Bay ON, Canada), january 2011.
- *Deformations of Modules and Cluster Algebras*, Colloquium of Surfaces and Representations, (Sherbrooke QC, Canada), october 2010.
- *Geometric Bases in Cluster Algebras*, Canadian Mathematical Society Summer Meeting, (Fredericton NB, Canada), june 2010.
- *Geometric Bases in Affine Cluster Algebras*, Maurice Auslander Distinguished Lectures and International Conference, (Woods Hole MA, USA), april 2010.
- *Generic Cluster Characters for 2-Calabi-Yau Categories*, South American Meeting on Representations of Algebras and Related Topics, (Mar del Plata, Argentina), march 2010.
- *Generic Bases and Positivity Bases in Acyclic Cluster Algebras*, XXth Meeting of Representation Theory of Algebras, (Sherbrooke QC, Canada), october 2009.
- *Generalized Chebyshev Polynomials and Regular Components of an Auslander-Reiten Quiver*, International Conference on Cluster Algebras and Related Topics, (Mexico City, Mexico), december 2008.

Seminar talks

- *Quasi-Cluster Algebras from Non-Orientable Surfaces*, Algebra Seminar, (Sherbrooke QC, Canada), april 2011.
- *Friezes, Strings and Cluster Variables*, Algebra Seminar, (Sherbrooke QC, Canada), april 2011.
- *Cluster Bases in Cluster Algebras*, Géométrie, Algèbre et Algèbres d'opérateurs Working Group, (Clermont-Ferrand, France), february 2011.
- *Cluster Bases in Cluster Algebras*, Algebra Seminar, (Tours, France), february 2011.
- *A Combinatorial Approach to Cluster Characters*, Applied Algebra Seminar, (York ON, Canada), january 2011.
- *Friezes, Strings and Cluster Variables*, UQAM Combinatorics Seminar, (Montréal QC, Canada), november 2010.
- *Cluster Bases in Acyclic Cluster Algebras*, Cluster Algebras Seminar, (Storrs CT, USA), november 2010.
- *Positivity for Rank Two Cluster Algebras*, Algebra Seminar, (Sherbrooke QC, Canada), september 2010.
- *Generic Cluster Characters*, Algebra Seminar, (Sherbrooke QC, Canada), march 2010.
- *Cluster Algebras and Generic Representation Theory*, Mathematics Department Colloquim, (Fredericton NB, Canada), february 2010.
- *Chebyshev Polynomials*, Algebra Seminar (Sherbrooke QC, Canada), october 2009.
- *Generic Bases in Acyclic Cluster Algebras*, Algebra Seminar, (Sherbrooke QC, Canada), september 2009.
- *Generic Variables in Acyclic Cluster Algebras via Quiver Representations*, Algebra seminar, (Padova, Italy), june 2009.
- *Generic Variables in Acyclic Cluster Algebras*, Algebra Seminar, (Saint-Etienne, France), march 2009.
- *Generic Variables in Acyclic Cluster Algebras*, Colloque Tournant, (Paris, France), february 2009.
- *Generalized Chebyshev Polynomials and Regular Components of an Auslander-Reiten Quiver*, Algebra seminar, (Lyon, France), april 2008.
- *An Approach to Non-simply-laced Cluster Algebras*, Cluster Algebras Workshop, Paris VII (Paris, France), january 2008.
- *Towards the Semicanonical basis of Affine Cluster Algebras*, Algebra seminar, NTNU (Trondheim, Norway), october 2007.

Other talks

- Series of lectures at the Calabi-Yau Working Group (Sherbrooke QC, Canada), september 2010.
- Series of lectures at the Cluster Algebras Working Group (Sherbrooke QC, Canada), september 2010.
- Series of lectures at the Deformation Theory Working group (Sherbrooke QC, Canada), february-april 2010.
- *Zariski Topology*, Club Mathématiques, (Sherbrooke QC, Canada), january 2010.
- *Graph Mutations*, Club Mathématiques, (Sherbrooke QC, Canada), september 2009.
- *Introduction to Cluster Algebras*, PhD seminar, (Lyon, France), march 2008.
- *Koszul Duality*, Spring school Derived equivalences : representations and coherent sheaves, (Wuppertal, Germany), march 2008.
- *The Kronecker Quiver and Coherent Sheaves over \mathbb{P}^1* , Spring school on Hall algebras and their applications, (Wuppertal, Germany), march 2007.

Various competences

- English (fluent).
- French (mother tongue).
- Good notions of German.
- Notions of Spanish.
- Programming in Maple, Matlab, Sage, L^AT_EX, PHP, MySQL, HTML, CSS, JavaScript.
- Mastery of Unix and Windows operating systems.
- Notions of C, C++, Java.