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## Positions and Education

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- 2018 – ... PRAG, Institut Fourier (Université Grenoble-Alpes).  
2017 – 2018 ATER, Institut Fourier (Université Grenoble-Alpes).  
2015 – 2017 Visiting Assistant Professor, Kansas State University.  
2015 PhD degree, LAGA (Université Paris 13), supervised by Bob Oliver on *The cohomology with twisted coefficients of the classifying space of a fusion system*.  
2012 Master 2 MFPI, Université Paris 13 (*first class honours*).  
Magistère de Mathématiques, Université Paris-Sud 11.  
2011 Master 2 Formation des Enseignants (*with the highest honours and congratulation of the jury*), ENS de Cachan.  
Agrégation externe de Mathématiques, rank 4<sup>th</sup>.  
2010 Master 1 de Mathématiques Fondamentales et Appliquées (*with honours*), Université Paris-Sud 11.  
Senior thesis on "*Differential Galois theory*", Université Paris-Sud 11.  
Entrance at the ENS de Cachan with the concours 3A, rank 16<sup>th</sup>.  
2009 Licence de Mathématiques Fondamentales et Appliquées (*first class honours*), Université Paris-Sud 11.

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## Research interests

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My interests include algebraic topology, group theory and the links between the two. My research studies the **interactions between group theory and homotopy theory** through the notion of classifying spaces. More precisely, I am interested in  **$p$ -local structure of groups** and their classifying spaces. Some recent projects lead me to **topological data analysis**. Finally, I am also playing with dice on my spare time.

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## Papers

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### Preprints and submitted papers

*Centric linking systems of locally finite groups*, 2017.  
Submitted to Algebraic and Geometric topology.  
arXiv:1702.03995

### Published and accepted papers

*Comparing  $n$ -dice fixing the sum of the faces*, 2019.  
Bulletin of the ICA, vol. 90, 2020, pp. 39-49.  
arXiv:1912.04031

*Control of fixed points over discrete  $p$ -toral groups, and existence and uniqueness of linking systems*,  
Journal of Algebra, vol. 499, 2018, pp.43–73.  
<https://doi.org/10.1016/j.jalgebra.2017.11.035>  
arXiv:1511.04291

*Alperin's Fusion Theorem for localities*,  
Communications in Algebra, vol. 46(6), 2017, pp.2615–2619.  
<https://doi.org/10.1080/00927872.2017.1392537>  
arXiv:1603.02599

*Cohomology of linking systems with twisted coefficients by a  $p$ -solvable action*,  
Homology, Homotopy and Applications, vol. 19(2), 2017, pp.61–82.  
<http://dx.doi.org/10.4310/HHA.2017.v19.n2.a4>  
arXiv:1507.02401

*Cohomology with twisted coefficients of the classifying space of a fusion system*,  
Topology and its Applications 212 (2016), 1–18.  
<http://dx.doi.org/10.1016/j.topol.2016.09.001>  
arXiv:1504.03191

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## University Teaching

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Spring 2020	Lectures and tutorials in general maths (Math Filiaires), Polytech Grenoble. PeiP-D, Polytech Grenoble. UE <i>Modélisation</i> in M1 MEEF, Université Grenoble-Alpes. Tutorials in MAT 401, Université Grenoble Alpes. ETC <i>Jeux combinatoires et raisonnements mathématiques</i> , Université Grenoble Alpes.
Fall 2020	Lectures and tutorials in general maths (Tronc Commun), Polytech Grenoble. PeiP-D, Polytech Grenoble. Lectures in <i>Préparation au concours de l'agrégation externe de mathématiques</i> , Université Grenoble-Alpes. Tutorials in <i>Topology</i> in L3A, Université Grenoble-Alpes.
Spring 2020	Tutorials in general maths (Math Filiaires), Polytech Grenoble.
Fall 2019	Lectures and tutorials in general maths (Tronc Commun), Polytech Grenoble. Lectures in <i>Préparation au concours de l'agrégation externe de mathématiques</i> , Université Grenoble-Alpes. Tutorials in <i>Topology</i> in L3A, Université Grenoble-Alpes.
Spring 2019	Lectures and tutorials in general maths (Math Filiaires), Polytech Grenoble. Lectures/Tutorials MAT 432 (course in english), Université Grenoble-Alpes. Lectures in L0, Université Grenoble-Alpes.
Fall 2018	Lectures and tutorials in general maths (Tronc Commun), Polytech Grenoble. <i>Complex analysis</i> , Polytech Grenoble. Lectures in <i>Préparation au concours de l'agrégation externe de mathématiques</i> , Université Grenoble-Alpes. Tutorials in <i>Topology</i> in L3A, Université Grenoble-Alpes.
Spring 2018	Lectures on multivariable calculus, Polytech Grenoble. Tutorials MAT 203, Université Grenoble-Alpes. Tutorials MAT 402, Université Grenoble-Alpes.
Fall 2017	Lecture/Tutorials Math 104, Université Grenoble-Alpes. Tutorials MAT 309, Université Grenoble-Alpes.
Spring 2017	<i>Applied Matrix Theory</i> , Kansas State University. <i>Discrete Mathematics</i> , Kansas State University.
Fall 2016	<i>Introduction to Contemporary Mathematics</i> , Kansas State University.
July 2016	<i>Introduction to Algebraic Topology</i> , Summer School, Prishtina University (Kosovo).
Summer 2016	<i>Applied Matrix Theory</i> , Kansas State University.
Spring 2016	<i>Applied Matrix Theory</i> , Kansas State University.
Dec. 2015	<i>Introduction to Graph Theory</i> , Animath Winter School, Prishtina University (Kosovo).
Fall 2015	<i>General Calculus and Linear Algebra</i> , Kansas State University.
2014 – 2015	Tutorials in Licence 2, Université Paris 13. Lectures in <i>Préparation au concours de l'agrégation externe de mathématiques</i> , Université Paris 13.
2013 – 2014	Tutorials in Licence ATS, Université Paris 13. Lectures in <i>Préparation au concours de l'agrégation externe de mathématiques</i> , Université Paris 13. Khôlles second year Sup Galilée, Université Paris 13.
2012 – 2013	Tutorial in Licence 1, Université Paris 13. Tutorials in second year of IUT Informatique, Université Paris 13.

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## Students

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### graduate student

- Nicolas Lemoine, PhD student, (supervised with Jean Baptiste Meilhan and Radu Stancu) 2020 – ...
- Nicolas Lemoine, student in M2, 2020.
- Sebastien Becker, PhD student, (supervised with Emilie Devijver and Noel Jakse) 2019 – ...
- Anand Ballou, student in M2, (supervision with Massih-Resa Amini and Emilie Devijver) 2019.]

### Etudiants de licence

- Etienne Delahaye, student in 1st year in *INSA de Lyon*, (supervision with Emilie Devijver and Massih Resa Amini), 2018.
- Yann Soukoussian, student in L1 (*stage d'excellence*), 2018.
- Romain Colson, student in L2, 2018.
- Estelle Colomb, student in L1 (*stage d'excellence*), 2018

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## Project in which I am (was) involved

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- 2019 – ...      Chaire *Machine Learning for Materials Design and Efficient Systems* in the MIAI.  
2018              PEPS STATOPO, with Emilie Devijver and Mélina Galopin.

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## Talks

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- Nov. 2017      *How to compute topological feature ?*  
Séminaire de l'équipe AMA, LIG, Grenoble.
- Oct. 2017      *Cohomology with twisted coefficients of the classifying space of a fusion system*  
Colloque 2017 du GDR 2875, Paris.
- Oct. 2017      *Introduction à la théorie homotopique des système de fusion,*  
Séminaire de topologie, Institut Fourier, Grenoble.
- Jan. 2017      *Localités arboricoles*  
Séminaire de Théorie des Groupes, Amiens.
- Jan. 2017      *Localités arboricoles*  
Séminaire de physique mathématique et de topologie algébrique, Angers.
- Jan. 2017      *Localités arboricoles*  
Séminaire de Topologie, Lille.
- Jan. 2017      *Localités arboricoles*  
Séminaire de l'équipe topologie algébrique, Paris 13.
- Nov. 2016      *Cohomology with twisted coefficients of linking systems*  
Workshop Fusion systems and equivariant algebraic topology, Hausdorff Research Institute for Mathematics.
- Nov. 2016      *Fusion systems and their classifying spaces*  
Departmental Colloquium Mathematics, KU Leuven.
- Apr. 2016      *The  $p$ -completion of classifying spaces of finite groups*  
Topology Seminar, Kansas State University.
- Jan. 2016      *Existence et unicité des systèmes de liaison*  
Equipe Théorie des groupes seminar, Amiens.
- Jan. 2016      *Existence et unicité des systèmes de liaison*  
Equipe Topologie Algébrique seminar, Paris 13.
- Sep. 2015      *Fusion systems and linking systems*  
*Centric linking systems and classifying spaces of saturated fusion systems*  
*Cohomology with twisted coefficients of linking systems and stable elements*  
3 talks, Algebra Seminar, Kansas State University.
- July 2015      *Classifying spaces of saturated fusion systems and their cohomology*  
Young Topologist Meeting, Lausanne.
- Fev. 2015      *Cohomology with twisted coefficients of the geometric realization of a linking system*  
Equipe Topologie Algébrique seminar, Paris 13.

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## Conferences and Workshops Attended

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Feb. 2020	<i>Topology and Málaga Meeting and Jibiri Seminar</i> , Málaga.
Jun. 2019	<i>Méthodes catégoriques et homotopiques en théorie des représentations</i> , Amiens.
Jan. 2019	<i>Topology and Málaga Meeting</i> , Málaga.
Mar. 2018	<i>Topology and Málaga Meeting</i> , Málaga.
Oct. 2017	<i>Colloque 2017 du GDR 2875</i> , Paris.
jun. 2017	<i>Algebraic Topology and Representation Theory</i> , Lille.
Nov. 2016	<i>Workshop : Fusion systems and equivariant algebraic topology</i> , Hausdorff Research Institute for Mathematics. <b>(invited)</b>
Aug. 2016	<i>PIMS Summer School on Geometric and Topological Aspects of the Representation Theory of Finite Groups</i> , University of British Columbia.
Feb. 2016	<i>Midwest Topology Seminar</i> , Northwestern University.
July 2015	<i>Young Topologist Meeting</i> , Lausanne.
Jun. 2015	<i>Conference in honour of Dave Benson's 60th birthday</i> , Skye.
Feb. 2015	<i>CoGrAl2015</i> , Jena.
Oct. 2014	<i>Rencontre annuelle du GDR 2875</i> , Clermont-Ferrand.
July 2014	<i>Journées de théorie de l'homotopie en l'honneur de Jean Lannes et Bob Oliver</i> , Paris.
Jun. 2014	<i>Young algebraists' conference 2014</i> , Lausanne.
Oct. 2013	<i>The theory of <math>p</math>-local compact groups</i> , Copenhagen. <i>Classifying spaces, loop spaces and finiteness</i> , Copenhagen.
July 2013	<i>Young topologist meeting</i> , Lausanne.
Jun. 2013	<i>Classification Problems in Groups and Fusion Systems</i> , Copenhagen.
May 2013	<i>Conference in Algebra and Topology</i> , Nantes.
Oct. 2012	<i>Rencontre annuelle du GDR 2875</i> , Lille.
May 2012	<i>Journées « Popularisation des mathématiques »</i> , Orléans.
Apr. 2012	<i>Foncteurs 2012</i> , Nantes.

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## Visits to Collaborators and Invitations

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Mar. 2019	Invitation of Antonio Diaz Ramos and Oihana Garaialde for a week at Institut Fourier.
Feb. 2019	Invitation of Antonio Diaz Ramos for a week at Institut Fourier.
Jan. 2019	Invitation of Sune Precht Reeh for a week at Institut Fourier.
Jun. 2018	A week at the UAB, Barcelona (contact : Sune Precht Reeh and Natalia Castellana).
Jan. 2017	Three days at the LAMFA, Amiens (contact : Radu Stancu).
May 2015	Two days at the LAMFA, Amiens (contact : Radu Stancu).
Oct. 2014	One month at the <i>Centre for Symmetry and Deformation</i> , Copenhagen University (contact : Jesper Grodal and Jesper Michael Møller).
Sep. 2014	Two days at the LAMFA, Amiens (contact : Radu Stancu).
Oct. 2013	One month at the <i>Centre for Symmetry and Deformation</i> , Copenhagen University (contact : Jesper Grodal).

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## Responsabilities and Work Experiences

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2019 – ...	Member of the council of the UFR IM2AG.
2018 – ...	Member of the council of the IREM de Grenoble.
2013 – 2015	Member of the library commission, LAGA.
2012 – 2015	Member of the council of the LAGA (mathematics department). Member of the PhD school council, Institut Galilée (division of science).
2010	Senior thesis on " <i>Differential Galois theory</i> ", Université Paris-Sud 11.
2009 – 2010	Work at the secretarial office of L3 and Master of Mathematics, Université Paris-Sud 11.
2007 – 2008	Seasonal jobs of educator among disabled persons with personality disorders and/or neurological disorders, ADAPEI de la Loire.

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## Popular Science and Involvements in science education

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Involvement with *IREM de Grenoble* :

- Groupe *Raisonnement, logique, Situations de recherche pour la classe*, 2019-...
  - ★ *Tangente Éducation numéro 55 : Les situations de recherche pour la classe*, Dec. 2020.
- Stage MathC2+, june 2019.
- Groupe *Géométrie pratique avec instruments de mesure anciens*, 2018-2019.
  - ★ Stage "*Math en Manipulant, instruments anciens*", 2019.
  - ★ "Mesurons, arpentons : expériences de géométrie pratique sur le terrain" in actes du colloque : des mathématiques dans notre environnement, 2019.
  - ★ Stage "*Les mathématiques au service de la course d'orientation*", 2019.
  - ★ Stage "*Math en Manipulant, instruments anciens*", 2018.
  - ★ Stage MathC2+, june 2018.
- Club de Math, 2018-...
  - ★ *Tangente Éducation numéro 55 : Les situations de recherche pour la classe*, Dec. 2020.
  - ★ Lab Junior, 2020 and 2021.
  - ★ Stage MathC2+, june 2019, 2020, 2021.

Involvement with *Math à modeler* :

- Research activity with a middle school class, Grenoble, spring 2019
- Stall for *Remue méninge*, Echirolles, April 2019.
- Research activity with an elementary school class, Poisat, Spring 2018.
- Stall for *Remue méninge*, Echirolles, April 2018.
- Stall for the *fête de la science*, Saint Hilaire du Touvet, October 2017.

Involvements with the association *Animath* :

- I am involved in the scientific program of a TV show on Télé Ecole (Senegal).
- "Sénémath" : coordination of several math clubs in Senegal, 2019-...
  - ★ Spring School for high school students, Dakar (Senegal), March 2019.
- Coordination of a math club in Kosovo, 2015-2016.
  - ★ Summer school for university students, Prishtina (Kosovo), July 2016.
  - ★ Winter school for university students, Prishtina (Kosovo), December 2015.
  - ★ Spring School for high school students, Prishtina (Kosovo), April 2015.
- Tutoring organized by Farouk Boucekkine, Lycée Henry IV, 2013.

Involvement in the *Salon de la culture et des jeux mathématiques* :

- Stalls Math à modeler the 20<sup>th</sup> edition, May 2019.
- Stalls Math à modeler the 19<sup>th</sup> edition, May 2018.
- Stalls INSMI/IHP/CNRS and Science Ouverte at the 16<sup>th</sup> edition, May 2015.
- Stalls INSMI/IHP/CNRS and Science Ouverte at the 15<sup>th</sup> edition, May 2014.
- Stall INSMI/IHP/CNRS at the 13<sup>th</sup> edition, May 2012.

Involvement with the association *MATH.en.JEANS* :

- Congrès Math.en.JEANS, Université Grenoble Alpes, 2019.
- Reviewer, since 2013.
- Congrès MATH.en.JEANS, Univeristé Paris Sud 11, 2013.

Involvement at Kansas State University (2015-2017) :

- Navajo Math Circles.
- *Math Club* of the Mathematics Department.
- *Thomas Parker Mathematical Competition* Committee member.
- *Math Modeling Seminar*.

Involvement with the association *Science Ouverte* :

- Conference at the *Atlanta Science Festival*, Atlanta, March 2016.
- Université d'été *Science ouverte à Paris 13*, Université Paris 13, June 2015.
- Stall at the *forum des mathématiques vivantes*, 104 (Paris), March 2015
- Stage *Olympic' Maths*, IHP, February 2015.
- Stage *Aux frontières du chaos*, IHP, October 2014.
- Université d'été *Science ouverte à Paris 13*, Université Paris 13, June 2014.
- Stage *La mesure, en long en large et en travers!*, IHP, April 2014.
- Université d'été *Science ouverte à Paris 13*, Université Paris 13, June 2013.
- Tutoring, since 2012.

Involvement with the website *Images des Maths* (<http://images.math.cnrs.fr/>).

- Reviewer since a a while.

- Article on Seifert surfaces and crochet : *Crochet, objets mathématiques et surfaces de Seifert*.

Involvement with some popular science events organized by people from Université Paris 13 :

- Exhibition *Les mathématiques dans la nature* organized by Gwenola Madec, several participations starting in 2013.
- Exhibition *Regard dans les Espaces* organized by Pierre Berger, 2013.

Talks at PhD seminars or student seminars :

- talk at Prishtina University, 01/05/2015.
- PhD seminar LAGA, 05/05/2014.
- PhD seminar ENS Lyon, 17/03/2014.
- PhD seminar LAGA, 13/12/2013.
- PhD seminar LAGA, 18/01/2013.
- Student seminar ENS Cachan, 09/05/2012.

Others :

- Blog : <https://galoiseries.wordpress.com>.
- Khôlles (ECS1 and ECS2), lycée Chaptal (Paris), 2011 - 2012.
- Private lessons (CM2, 6<sup>ième</sup>, 3<sup>ième</sup>, seconde, 1<sup>ère</sup>S, ECS1, ECS2, L1, L2 and L3).
- Tutoring in the first year of Licence PCST, Université Paris-Sud 11, 2010.

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## Languages

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French.

English.

Spanish.

Gap, Maple, Mupad, Matlab, Scilab, R.

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## Other hobbies

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Backpacker traveler (*more than 30 countries visited*).

Sports : handball, hiking, climbing.

Crochet : *mathematical objects (see picture on my webpage) and others*.

Music, guitar (*self-educated*).