

Clément Coine

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Born: April 13th 1990
Citizenship: French

Work experience

- Since Sep. 2020 **Associate Professor** ("Maître de conférences").
University Caen Normandie.
- 2019-2020 **Temporary assistant of teaching and research (A.T.E.R.)**.
Université Gustave Eiffel, Paris-Est Marne-la-Vallée.
- 2017-2019 **Postdoctoral Researcher**.
Central South University, under the supervision of Jiao Yong

Formation

- 2014-2017 **Ph.D. Student in Functional Analysis**, *University of Bourgogne Franche-Comté*,
under the supervision of Christian Le Merdy.
Subject : Continuous linear and bilinear Schur multipliers and applications to perturbation theory
- 2013 – 2014 **Master Recherche Mathématiques approfondies in Functional Analysis**,
University of Franche-Comté.
Master thesis under the supervision of Christian Le Merdy
Subject : Operator Lipschitz functions on Schatten classes
Grade "Very Good" (TB)
- 2013 **Agrégation de Mathématiques**.
National competitive examination to teach mathematics in secondary and post-secondary education
Rank 22.
- 2012 – 2013 **Master Enseignement des Mathématiques**, *University of Franche-Comté*.
- 2010–2011 **Licence de Mathématiques**, *University of Franche-Comté*, 3-year university degree
in Mathematics, Grade "Very Good" (TB).

Research works

Publications

- 2022 **Compact and weakly compact Lipschitz operators**.
Avec Arafat Abbar and Colin Petitjean, accepted for publication in Proceedings of the Royal Society of Edinburgh.
- 2021 **Hypercyclicity in Lipschitz free spaces**.
Avec Arafat Abbar and Colin Petitjean, Integral Equations Operator Theory 93 (2021), no. 4, Paper No. 45, 27 pp.

- 2020 **Perturbation theory and higher order \mathcal{S}^p -differentiability of operator functions.**
Rev. Mat. Iberoam. 38 (2022), no. 1, pp. 189–221.
- 2020 **Complete boundedness of multiple operator integrals.**
Canadian Mathematical Bulletin, 1-17 (2020). doi :10.4153/S0008439520000570.
- 2019 **Higher order \mathcal{S}^2 -differentiability and application to Koplienko trace formula.**
With C. Le Merdy, A. Skripka, F. Sukochev, Journal of Functional Analysis, Volume 276, Issue 10 (2019), 3170-3204
- 2018 **Schur multipliers on $\mathcal{B}(L^p, L^q)$.**
J. Operator Theory 79 :2(2018), 301-326
- 2017 **When do triple operator integrals take value in the trace class ?.**
With Christian Le Merdy and Fedor Sukochev, To appear in Annales Institut Fourier.
- 2016 **Resolution of Peller’s problem concerning Koplienko-Neidhardt trace formulae : The unitary case.**
With C. Le Merdy, D. Potapov, F. Sukochev, A. Tomskova, Journal of Functional Analysis, Volume 271, Issue 7 (2016), 1747-1763
- 2016 **Resolution of Peller’s problem concerning Koplienko-Neidhardt trace formulae.**
With C. Le Merdy, D. Potapov, F. Sukochev, A. Tomskova, Proc. London Math. Soc.(3) 113 (2016), 113-139
[Peer review](#)
- 2017 **Reviewer for several journals.**

Research visits

- 2017 **Two months at the University of New Mexico, Albuquerque, USA.**
Invited by Anna Skripka.

Presentations

- 2020-2021 **A few talks about (R-)Ritt operators and their H^∞ -functional calculus,**
Workshop on "Harmonic and Non-commutative Analysis", Université Caen Normandie.
- November 2020 **Régularité des fonctions d’opérateurs,** *12ème journée de la Fédération Normandie-Mathématiques*, Université Caen Normandie.
- September 2020 **Opérateurs hypercycliques sur les espaces Lipschitz-libres,** *Seminar of Harmonic and Non-commutative Analysis*, Université Caen Normandie.
- March 2020 **Un problème de perturbation pour les fonctions d’opérateurs,** *Seminar of Functional Analysis*, Laboratoire de mathématiques Paul Painlevé, Lille.
- March 2020 **Perturbation du second ordre pour les fonctions d’opérateurs,** *Seminar of Analysis and Geometry*, Institut de mathématiques de Marseille.
- February 2020 **Opérateurs intégraux multiples et applications à des problèmes de perturbation,** *Seminar of Functional Analysis*, Institut de mathématiques de Jussieu-Paris Rive Gauche.
- November 2019 **Differentiability of operator functions in Schatten norms,** *Autumn school "Multipliers in Noncommutative Analysis and their Applications"*, Université Bourgogne Franche-Comté, Besançon, France.

- October 2019 **Differentiability of operator functions and application to trace formula**, *Seminar of Functional Analysis*, Central South University, Changsha, China.
- October 2019 **Différentiabilité des fonctions d'opérateurs**, *Seminar of Analysis*, Université Paris-Est Marne-la-Vallée, Champs-sur-Marne, France.
- June 2019 **Differentiability of operator functions in Schatten norms**, *Conference "Advanced Courses in Operator Theory and Complex Analysis"*, Université Paris-Est Marne-la-Vallée, Champs-sur-Marne, France.
- May 2019 **Mini-course (4 hours) "Norms of Schur Multipliers and applications"**, *Workshop on positivity*, University of New-Mexico, USA.
- June 2017 **Continuous Schur multipliers**, *Seminar "Analyse Harmonique Non Commutative"*, University Caen-Normandie, Caen, France.
- May 2017 **Multiple operator integrals and perturbation theory**, *Seminar "Probabilités, Analyse et Statistique"*, University Clermont Auvergne, Clermont-Ferrand, France.
- March 2017 **Triple operator integrals valued in trace class operators**, *Maths colloquium*, University of New Mexico, USA.
- November 2016 **S^1 -boundedness of triple operators integrals**, *Maths seminar*, Seoul National University, South Korea.
- July 2016 **Application of Schur multipliers to a problem of perturbation**, *20th Conference of the International Linear Algebra Society*, Katholieke Universiteit Leuven, Leuven, Belgium.
- June 2016 **Perturbation of second order for functional calculus**, *26th International Conference in Operator Theory*, West University, Timisoara, Romania.
- December 2015 **Application of Schur multipliers to a problem of perturbation**, *Journées du GdR Analyse Fonctionnelle, Harmonique et Probabilités 2015*, CIRM, Marseille, France.
- November 2015 **Un exemple de non-dérivabilité pour $t \mapsto f(A + tH)$ sur $S^1(H)$** , *Workshop on "Non-Commutative Functional Analysis"*, LMB, Besançon, France.
- June 2015 **Schur multipliers on $\mathcal{B}(L_p)$** , *Rencontres d'Analyse Fonctionnelle Besançon-Neuchâtel*, Institut mathématique de Neuchâtel, Switzerland.
- May 2015 **Operator-Lipschitz functions on Schatten classes**, *16^{èmes} Journées de l'école doctorale Carnot-Pasteur*, Institut de mathématiques de Bourgogne, Dijon, France.
- March 2014 **The Hilbert transform**, *Journée des jeunes chercheurs LMB 2014*, Laboratoire de Mathématiques de Besançon, France.

Participations to other schools, conferences and workshop

- October 2016 **Journées du GdR Analyse Fonctionnelle, Harmonique et Probabilités 2016**, *University Paul Sabatier, Toulouse, France*.
- August 2015 **Young Mathematicians in C^* -Algebras**, *University of Copenhagen, Denmark*.
- December 2014 **Winter school on Operator Spaces, Noncommutative Probability and Quantum Groups**, *Métabief, France*.
- October 2014 **Journées du GdR Analyse Fonctionnelle, Harmonique et Probabilités 2014**, *University Lille 1, Lille, France*.

Teaching

2020-2021

Preparation for the oral exam of the "Agrégation de Mathématiques", Université Caen Normandie.

Fifth year science students preparing for a national competitive examination to teach mathematics in secondary and post-secondary education.

Course about complex analysis and operators on a Hilbert space, and exercise sessions, Université Caen Normandie.

Fifth year science students.

Differential Calculus, exercise sessions, Université Caen Normandie.

Second year science students.

Linear Algebra, course and exercise sessions, Université Caen Normandie.

First year science students.

Probability, exercise sessions, Université Caen Normandie.

First year science students.

2019-2020

Linear Algebra, exercise sessions, Université Gustave Eiffel, Marne-la-Vallée.

Second year economics students.

Probability and Statistics, exercise sessions, Université Gustave Eiffel, Marne-la-Vallée.

Second year economics students.

Analysis, exercise sessions, Université Gustave Eiffel, Marne-la-Vallée.

First year economics students.

Statistics, exercise sessions, Université Gustave Eiffel, Marne-la-Vallée.

First year economics students.

2014-2017

Mock oral exams ("Colles") (2h per week), Lycée Victor Hugo, Besançon.

Second year students in advanced preparatory school for the French "Grandes Écoles".

Practice oral examinations of the "Agrégation de Mathématiques" (2015-2017), Université Bourgogne Franche-Comté, Besançon.

Fifth year science students.

Probability, exercise sessions (2017), Université Bourgogne Franche-Comté, Besançon.

Second year computer science students.

Analysis, course and exercise sessions, Université Bourgogne Franche-Comté, Besançon.

First year science students.

Analysis, exercise sessions, Université Bourgogne Franche-Comté, Besançon.

First year biology students.

Before 2014

Analysis, course and exercise sessions (51h), Université Bourgogne Franche-Comté, Besançon.

First year science students.

Analysis, course and exercise sessions (Differential calculus) (10h), Université Bourgogne Franche-Comté, Besançon.

First year biology students.

Analysis, exercise sessions (20h), *Université Bourgogne Franche-Comté, Besançon.*
First year biology students.

Tutoring, 2h per week (2011-2012), *Université Bourgogne Franche-Comté, Besançon.*

First year science students.

Popularization

November 2014 **Animation of a popularization workshop during the "Journée de Découverte de la Recherche Mathématiques**, *Besançon.*

Responsibilities

2015-2016 **Co-organizer of PhD students seminar**, *University of Franche-Comté, Besançon.*

2016 **Co-organizer of the "Journées de l'école Doctorale Carnot-Pasteur"**, *Besançon.*

2016 **Co-organizer of the "Journée des jeunes chercheurs LMB 2016"**, *University of Franche-Comté, Besançon.*

2015 **Co-organizer of the "Journées de l'école Doctorale Carnot-Pasteur"**, *Dijon.*

Skills

Langues **English**, *Good level.*

(B2 level given by the Centre de Linguistique Appliquée de l'Université de Franche-Comté, an expert center in languages)

Spanish, *Basic knowledge.*

Office softwares **Latex, software for word processing and presentation.**