Frédéric Jaëck

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Associate Professor (Maître de conférences)

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Websites & Social Links

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Philosophy of mathematical invariants (Seminar 2022-): https://philoinvar.hypotheses.org/

Philosophy of mathematics 19-21 Century (Seminar 2011-): http://www.sphere.univ-paris-diderot.fr/spip.php?article814

Annals of mathematics and philosophy (Founded 2021): https://mxphi.com/

Keywords

Philosophy of mathematics, Epistemology, History of mathematics

Biography

I am an associate professor at Aix-Marseille University, and a researcher attached to SPHère, a CNRS laboratory in Paris dedicated to history and philosophy of scences. I hold a doctorate in the history and philosophy of mathematics (Paris Diderot University), as well as a doctorate in fundamental mathematics (University of Bordeaux).

My current research focuses on the conditions that make possible the progression of mathematics, and seeks to account for the nature of this progression. My approach is situated at the crossroads between a tradition of critical philosophy and a descriptive philosophy adapted to the mathematics of the 19-21 centuries, and seeks to develop a type of intrinsic philosophy of mathematics.

Among other things, I have edited the volume *Lectures grothendieckiennes* (Mathematical Society of France and Spartacus-IDH, 2021) following a seminar I led at the École Normale Supérieure in Paris, edited the book *Gösta Mittag- Leffler and Vito Volterra. 40 years of correspondence* with L. Mazliak, E. Sallent Del Colombo and R. Tazzioli (European mathematical society, 2019) and participated in the work on the notion of generality in mathematics: *The Oxford handbook of generality in mathematics and the sciences* edited by K. Chemla, R. Chorlay and D. Rabouin (OUP, 2016).

I am one of the founders and a member of the editorial board of the journal *Annals of Mathematics and Philosophy* (MxP, 2022).

Employment

Aix-Marseille Université and IméRA (Institute of advanced study)

    2020 to present | Maître de conférences

École Normale Supérieure (Paris, FR)
2016 to 2020 | Lecturer at the Department of philosophy and Editor-in-chief of CultureMath at the Department of mathematics

Conservatoire National des Arts et Métiers (Paris, FR)
    2005 to 2016 | Lecturer

Trinity College Dublin: Dublin (Dublin, IE)
    2007 to 2008 | Lecturer

Lancaster University (Lancaster, GB)
    2002 to 2003 | Post Doc

Education and qualifications

Doctorate in the history and philosophy of mathematics (SPHERE)
    2015 | Université de Paris Faculté Sociétés et Humanités

Doctorate of pure mathematics (LABAG)
    1997 | Université de Bordeaux

Agrégation de mathématiques
    1992 | Concours national

Invited positions

Institute of advanced studies IméRA (Marseille, FR)
    2022 to 2023 | AMU Fellow

Institut Mittag-Leffler
    2018 | Invited for a 1 month stay
    2017 | Invited for a 1 month stay

Funding

Project DAFIP-GARLABAN

    2022 to 2024 | Grant from Aix-Marseille Université and region, 2 year, 15 000€ budget

Philosophie des invariants mathématiques (PIM'S)

    2022 to 2023 | Grant from IMéRA (Institute of advanced study in Marseille), 3 000€ budget

Lectures grothendieckiennes

    2017 to 2018 | Grant from DMA (Paris, ENS), 2 000€ budget

[ERC project in preparation on the philosophy of invariants. (Advanced Grant, 2023)]

Other activities

GDR [PhilMath](#) (CNRS)

    2022 to present | Member of the Scientific Committee

IMéRA (Marseille, FR)

    2022 to present | Organizer of the seminar 'Philosophy of mathematical invariants'

Annals of mathematics and philosophy (journal)

    2021 to present | Co-founder and member of the editorial board of MxP

SPHERE (CNRS, Paris, FR)

    2017 to present | Organizer of the seminar on 19-21 century history and philosophy of mathematics

    2020 to present | Member of the group working on the translation from German to English of the Brill-Noether Report.

Project in musicology and computer assisted pedagogy (AMU, France)

    2021 to present | Co-leader of the project

Project DAFIP-GARLABAN

    2022 to 2024 | Leader of a team of 12 teachers and 7 researchers on educational problems (Maths and French, elementary school and French cycle 3)

Agrégation externe de mathématiques

    2018 to 2021 | Member of the jury of the agrégation

ENS Ulm (Paris, FR)

    2017 to 2020 | Lecturer at the philosophy department: "Lautman and the French philosophy of mathematics"

    2016 to 2020 | Chief Editor of CultureMath (DMA)

    2017 to 2018 | Organizer of the seminar '[Reading Grothendieck Today](#)'

    2019 | Organizer of a [conference in Honor of the ethnomusicologist Simha Arom](#)

Works (+ under review marked *, full list and updated status on website)

Articles and book chapters (peer reviewed)

- ⤔ * CAN PHILOSOPHY SEIZE THE IDEA OF PROGRESSION IN MATHEMATICS? Under review, Philosophia Mathematica, 2023.

- ⤔ * L'ÉTOILE DE MITTAG-LEFFLER. Under review, Revue d'Histoire des Mamthématiques, 2023.

- ⤔ RÉCONCILIER LES COUPLES INHOMOGÈNES : UN PROGRAMME KANTIEN CHEZ LAUTMAN. In *Albert Lautman : Philosophie, Mathématiques, Résistance,* Éditions Rue d'Ulm (ENS), accepted for publication, 2023.

- THE CONCEPT OF DUALITY IN BANACH'S 1927 GROUNDBREAKING WORK ON FUNCTIONALS. In Duality in 19th and 20th century mathematical thinking, Krömer, R., Haffner, E. and Volkert, K. (eds.), Birkhäuser: Basel, accepted for publication, to appear 2023.

- HOW FRENCH MATHEMATICIANS LEARNED ABOUT WHAT HAPPENED TO THEIR POLISH COLLEAGUES DURING WW2. Frédéric Jaëck, Laurent Mazliak and Roman Murawski. Organon, Institute for the history of science, Polish Academy of Sciences, Vol.53, p.29-53, 2021.

- FROM FUNDAMENTA MATHEMATICAE TO STUDIA MATHEMATICA: THE RENAISSANCE OF POLISH MATHEMATICS IN LIGHT OF BANACH'S PUBLICATIONS 1919–1940. In: *Mathematical Communities in the Reconstruction After the Great War 1918–1928,* Mazliak L., Tazzioli R. (eds). Trends in the History of Science. Birkhäuser, Cham., 2021.

- WHAT WERE THE GENUINE BANACH'S SPACES IN 1922? REFLECTION ON AXIOMATISATION AND PROGRESSION OF THE MATHEMATICAL THOUGHT. Arch. Hist. Exact Sci., 2019.

- CALCUL DIFFÉRENTIEL ET INTÉGRAL ADAPTÉ AUX SUBSTITUTIONS PAR VOLTERRA. Historia Mathematica, Volume 48, Pages 29-68, 2019.

- LINES ON THE HORIZON. HADAMARD AND FRÉCHET, READERS OF VOLTERRA. Guerraggio, G. ; Jaëck, F. ; Mazliak, L. In Images of Italian mathematics in France. The Latin sisters, from Risorgimento to fascism, (éd. : F. Brechenmacher, G. Jouve, L. Mazliak, R. Tazzioli) coll. "Trends in the History of Science", Springer, 127-179, 2016.

- GENERALITY AND STRUCTURES IN FUNCTIONAL ANALYSIS: THE INFLUENCE OF STEFAN BANACH. In The Oxford Handbook of Generality in Mathematics and the Sciences (editors: K. Chemla, R. Chorlay, D. Rabouin), Oxford University Press, 2016.

- ÉLÉMENTS STRUCTURELS EN ANALYSE FONCTIONNELLE: TROIS NOTES DE FRÉCHET SUR LES OPÉRATIONS LINÉAIRES. Arch. Hist. Exact Sci. 64, no. 4, 461—483, 2010.

- A JOINT SIMILARITY PROBLEM ON VECTOR-VALUED BERGMAN SPACES. Constantin, O. ; Jaëck, F. J. Funct. Anal. 256, no. 9, 2768—2779, 2009.

- HYPER-REFLEXIVITY OF FREE SEMIGROUPOID ALGEBRAS. Jaëck, F. ; Power, S.C. Proc. Amer. Math. Soc. 134, no. 7, 2027—2035, 2006.

- N-TUPLES IN THE CLASS $A(N)$ AND FACTORIZATION PROPERTIES. J. Funct. Anal. 189, no. 2, 469—474, 2002.

- DUAL ALGEBRAS WITH A RICH SET OF $w*$-CONTINUOUS CHARACTERS. An. Univ. Timişoara Ser. Mat.-Inform. 39, no. 2, 87—97, 2001.

- ON THE CONTRACTIONS IN THE CLASSES $A_{m,n}$. Chalendar, I. ; Jaëck, F. J. Operator Theory 38, no. 2, 265—296, 1997.

Books as editor

- LECTURES GROTHENDIECKIENNES. Col. Nouvelles visions des sciences, Spartacus-IDH et Société Mathématique de France, 304p, 2021.

- GÖSTA MITTAG-LEFFLER AND VITO VOLTERRA. 40 YEARS OF CORRESPONDENCE, Jaëck, F. ; Mazliak, L. ; Sallent del Colombo, E. ; Tazzioli, R. Heritage of European Mathematics, 438 pages, 2019.

Other publications

- QUAND LE TIERS ET LE QUART SE REJOIGNENT À L'INFINI. CultureMath.ens.fr, 2021.

- DE LA CONJECTURE DE DUFFIN–SCHAEFFER AU THÉORÈME DE KOUKOULOPOULOS-MAYNARD. CultureMath.ens.fr, 2021.

- DUNCAN FARQUHARSON GREGORY: "LES LOGARITHMES IMPOSSIBLES.", CultureMath.ens.fr, 2017.

- DE PI AU CHAOS : POURQUOI LES MATHS SONT SI RÉJOUISSANTES ! Translation of "1989 and all that; A Journey into Mathematics", David Acheson, Mathemagic. Paris : Belin, 176p., 2006.

- L'HÉRITAGE DE KOLMOGOROV EN MATHÉMATIQUES. Translation of "Kolmogorov and Number Theory", K. Ford. (éd. : E. Charpentier, A. Lesne, N. Nikolskii). Collection Échelles. Paris : Belin, 303p., 2004.

Invited conferences (recent)

- CONFERENCE "MAURICE FRÉCHET: LES MATHÉMATIQUES, L'ABSTRAIT ET LE CONCRET"

    October 9-11, 2023, IHP, Paris; Organised by Frédéric Jaëck and Laurent Mazliak

    Talk: "Taming the infinite: Fréchet's compact sets" (in collaboration with Pascal Bertin)

- CONFERENCE "GROTHENDIECK, A MULTIFARIOUS GIANT: MATHEMATICS, LOGIC AND PHILOSOPHY"

    May 24-28, 2022, Chapman University in Orange, CA; Organized by Peter Jipsen, Alexander Kurz, Andrew Mosher, Marco Panza, Ahmed Sebbar, Daniele Struppa, Colin Mclarty, Jean-Pierre Marquis, Jean-Jacques Szczeciniarz.

    Talk: "A philosophy in the shade of Grothendieck's mathematics"

- COLLOQUE "ALBERT LAUTMAN: PHILOSOPHIE, MATHÉMATIQUES, RÉSISTANCE"

    October 27-29, 2021, École normale supérieure de Paris; Organized by Jean-Jacques Szczeciniarz, Christophe Eckes, Baptiste Mélès, Bertrand Rémy.

    Talk: "Réconcilier les couples inhomogènes : un programme kantien chez Lautman."

- RENCONTRE AIX-NANTES EN PHILOSOPHIE ET HISTOIRE DES MATHEMATIQUES

    February 22, 2021; Organized by Paula Cantu and Scott Walter.

    Talk: "La philosophie peut-elle penser la progression des mathématiques ?"