

Séverin Philip

JSPS fellow

*Research Institute for Mathematical Sciences,
Kyoto University
Kitashirakawa-Oiwakecho, Sakyo-ku, Kyoto 606-8502, Japan
✉ sphilip@kurims.kyoto-u.ac.jp
Born 02/04/1991 Nationality : French*

Research interests

- Abelian varieties with bad reduction
- Arithmetic moduli spaces
- Homotopic Galois theory, Oda's problem and related issues

Education

- 2018–2021 **PhD in Number Theory**, *Université Grenoble Alpes*, France
PhD advisor Prof. G. Rémond, title "Semi-stable reduction of abelian varieties" (defense Oct. 2021).
- 2015–2018 **Masters of Mathematics (MSc.)**, *Université Grenoble Alpes*, France
Major: Number Theory, with honors, ranked 1st.
- 2017 **"Agrégation de mathématiques"**, *French national exam (ranked 43rd)*.
- 2015 **License of Mathematics (BSc.)**, *Université Grenoble Alpes*, France
With honors, ranked 1st.

Positions

- Since August 2022 **Postdoctoral researcher (JSPS)**, *RIMS, Kyoto University*, Japan
- 2021–2022 **Postdoctoral researcher (ATER position) (incl. teaching resp. 96hrs/yr)**, *Université Grenoble Alpes*, France
- 2018–2021 **PhD student (incl. teaching resp. 64hrs/yr)**, *Université Grenoble Alpes*, France

Memberships, responsibilities and rankings

- Since Sept. 2023 **Reviewer for MathSciNet**, (2 reviews)
- May 2023 **Ranked 2nd for the position of "Maître de Conférence"** at Bordeaux university
- May 2023 **Ranked 3rd for the position of "Maître de Conférence"** at Clermont-Ferrand university
- Since Mar. 2023 **"Atelier de Géométrie Arithmétique" (Franco-Japanese)**, *Lead organizer (2 sessions)*, <https://ahgt.math.cnrs.fr/activities/#young-researchers-workshops>
- Since 2022 **"Arithmetic and Homotopic Galois Theory" RIMS-LPP-ENS International Research Network**, *core member*, <https://ahgt.math.cnrs.fr/>

Publications

- Groupes de monodromies finies des variétés abéliennes. (27p.) available online. 2024.
- Oda's problem for cyclic special loci. (4p.) *Oberwolfach report*, 2023.
- On Oda's problem and special loci. (37p.), *RIMS preprint*, submitted, with B. Collas, 2023.
- Field of definition of abelian subvarieties, *Journal de Théorie des Nombres de Bordeaux*. 34. 2022. 537–547.
- Variétés abéliennes CM et grosse monodromie finie sauvage, *Journal of Number Theory*. 240. 2022.

163–195.

- On the semi-stability degree for abelian varieties, *Bulletin of the London Mathematical Society*. 54. 2022. 2174–2187.

Invited Talks to workshops and seminars

Arithmetic of fundamental groups

- 2024 May **Niigata Algebra Seminar**, *Niigata*, Japan
The maximal degeneration method for special loci
- 2024 Apr. **FJ-LMI Seminar**, *Tokyo*, Japan
Galois outer representations, Oda's problem and special loci
- 2024 Mar. **Anabelian geometry in Tokyo 2024**, *Tokyo*, Japan
Oda's problem for cyclic special loci
- 2024 Mar. **The 20th Mathematics Conference for Young Researchers**, *Hokkaido (participation online)*, Japan
The classical problem of Oda and an analogue for cyclic special loci
- 2024 Mar. **Low Dimensional Topology and Number Theory XV**, *Fukuoka*, Japan
The maximal degeneration method for special loci
- 2024 Jan. **Aichi Number Theory Seminar**, *Nagoya*, Japan
On Oda's problem and special loci
- 2023 Sept. **MFO-RIMS Tandem workshop 2023 - Arithmetic Homotopy and Galois Theory**, *Research Institute for Mathematical Sciences*, Japan
Oda's problem for cyclic special loci

Diophantine geometry of abelian varieties

- 2023 Dec. **Copenhagen Number Theory seminar**, *Copenhagen*, Denmark, (online)
A new construction for finite monodromy groups.
- 2023 Apr. **Séminaire Variétés Rationnelles**, *École polytechnique*, France
Degré de semi-stabilité des variétés abéliennes et monodromie finie
- 2023 Apr. **Number Theory seminar**, *Université de Bordeaux*, France
Groupes de monodromie finie et variétés abéliennes CM
- 2023 Jan. **"Arithmétique" seminar**, *Université de Lille*, France
Groupes de monodromie finie et variétés abéliennes CM
- 2022 Nov. **RIMS NT/AG seminar**, *Kyoto University*, Japan
Semi-stability degree for abelian varieties and finite monodromy groups in the CM case
- 2022 Nov. **4th Kyoto-Nanjing workshop on Geometry and Arithmetic**, *Online*
Fields of definition of endomorphisms and abelian subvarieties.
- 2022 Apr. **Algebra seminar**, *Western University*, Canada, (online)
On the degree of semi-stable reduction for abelian varieties.
- 2021 Nov. **Number theory seminar**, *Clermont-Ferrand*, France
Degré de semi-stabilité pour les variétés abéliennes.
- 2021 Sept. **Number theory seminar**, *Grenoble*, France
Groupes de monodromie finie et degré de semi-stabilité pour les variétés abéliennes.
- 2020 Dec. **Copenhagen Number Theory seminar**, *Copenhagen*, Denmark, (online)
The degree of semi-stable reduction.

- 2020 Dec. **RéGA seminar**, Paris, France, (online)
Critères de réduction pour les variétés abéliennes.
- 2020 Aug. **Homotopical arithmetic geometry seminar**, RIMS-Kyoto, Japan, (online)
Good reduction of abelian varieties and Ogg-Néron-Shafarevich criterion.
- 2020 May **Linfoot seminar**, University of Bristol, UK, (online)
Semi-stable reduction of abelian varieties.
- 2020 Feb. **"Around the torsion conjecture for abelian varieties" seminar**, Université Grenoble Alpes, France
On ℓ -adic representations 1 & 2.
- 2019 Oct. **Fourier "Phd days"**, Université Grenoble Alpes, France
Semi-stable reduction of abelian varieties.
- 2018 Nov. **"Bernouillis Tafelrunde" seminar**, University of Basel, Switzerland
Field of definition of abelian subvarieties.

Invited conferences and workshops

- 2023 Sep. **Arithmetic Homotopy and Galois Theory**, MFO-RIMS Tandem workshop, Research Institute for Mathematical Sciences, Japan
Video Conference Assistant
- 2023 Jun. **Explicit computation with stacks**, Mathematical Research Community (AMS), Beaver Hollow Conference Center, United States of America
- 2023 Mar. **Arithmetic and Homotopic Galois Theory**, Hybrid Paris-Kyoto conference, Research Institute for Mathematical Sciences, Japan
- 2021 Mar. **Homotopic and Geometric Galois Theory**, MFO workshop, Oberwolfach, (online)
Oberwolfach Leibniz graduate student fellow, reporter
- 2019 Jul. **Galois theory and Number theory**, 2nd French-German summer school, Technical University of Dresden, Germany
- 2019 Apr. **Reinventing rational points**, IHP program (Spring school), CIRM Luminy, France

Teaching experience

Creation of exercises sheets, evaluations; grading of final exams; high availability for one-on-one discussions.

- 2018 **Bilinear algebra and Fourier Theory**, *Students in science and design program*, 2nd year, 4hrs/week
- 2018 **Oral evaluations**, *Students in mathematics program*, 1st year, 12hrs over 2 weeks
- 2019 **Mathematics for other sciences**, *Students in engineering sciences program and students in earth sciences program*, 1st year, 6hrs/week
- 2020 **Mathematics for other sciences**, *Students in engineering sciences program and students in earth sciences program*, 1st year, 6hrs/week
- 2021 **Mathematics for other sciences**, *Students in chemistry and biology program*, 1st year, 6hrs/week
- 2021 **Introduction to mathematical biology and to the dynamic of populations**, *Students in chemistry and biology program*, 1st year, 2hrs/week

Grants and funding

2022–2024 Laureate of a JSPS Kakenhi grant

Languages

French, *Mother tongue*

English, *Fluent, 965 TOEIC*

Japanese, *Beginner*