

# Séverin Philip

Postdoctoral fellow

Department of Mathematics  
Stockholm University  
Albanovägen 28, Stockholm, Sweden  
✉ severin.philip@math.su.se  
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 October 2024 **Postdoctoral researcher (incl. teaching resp. 20%)**, *Stockholm University*, Sweden
- 2022-2024 **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

- May 2024 **Shortlisted for the CNRS position of "chargé de recherche"**
- May 2024 **Ranked 2nd for the position of "Maître de Conférence" at Sorbonne Université**
- Since Sept. 2023 **Reviewer for MathSciNet, (5 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 (3 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. (33p.) available online. 2024.
- Oda's problem for cyclic special loci. (4p.) *Oberwolfach report*, 2023.
- On Oda's problem and special loci. (41p.), *RIMS preprint*, with B. Collas, To appear in *Journal de*

l'Institut de Mathématiques de Jussieu, 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 conferences, workshops and seminars

### Arithmetic of fundamental groups

- 2024 Apr. **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

- 2024 Nov. **Number theory seminar**, *Besançon*, France  
Une caractérisation des groupes de monodromie finie des variétés abéliennes
- 2024 Sep. **Rencontre de théorie des nombres ETHéN**, *CIRM*, France  
Le degré de semi-stabilité pour les variétés abéliennes
- 2024 Jul. **Sendai-Hiroshima Number Theory Conference**, *Hiroshima*, Japan  
The semi-stability degree for abelian varieties
- 2024 Jun. **RIMS AG/NT seminar**, *Kyoto*, Japan  
Finite monodromy groups of abelian varieties
- 2024 Jun. **Hokkaido algebra seminar**, *Sapporo*, Japan  
Semi-stable reduction and finite monodromy groups 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  $\ell$ -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

Since 2021 **Supervision of master's internships and bachelor thesis**

## Grants and funding

2022–2024 **Laureate of a JSPS Kakenhi grant**, 2.4M Yen

## Languages

**French**, *Mother tongue*

**English**, *Fluent, 965 TOEIC*

**Japanese**, *Beginner*