

Curriculum Vitae

Personal information

Name Solal Perrin-Roussel
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Education

- 2021 – 2022 **École Normale Supérieure Paris-Saclay** *Gif-sur-Yvette*
Master 2 Recherche at Université Sorbonne Paris Nord
M2 in fundamental mathematics.
Courses taken : Spectral Theory, Microlocal and semiclassical analysis and spectral asymptotics, Uncertainty Principles, Topological Data Analysis, Random Operators.
- 2020 – 2021 **École Normale Supérieure Paris-Saclay** *Gif-sur-Yvette*
Master 2 Formation à l'Enseignement Supérieur
Agrégation in mathematics.
Ranked 27th.
- 2019 – 2020 **Ecole Normale Supérieure Paris-Saclay (ENS)** *Cachan, France*
Master 1 : Master's degree in mathematics
Courses taken : Algebra, Probabilities, Analysis, Geometry, Evolution Problems, Compact Groups and Lie Groups, Spectral Theory for Quantum Mechanics
- 2018 – 2019 **Ecole Normale Supérieure Paris-Saclay (ENS)** *Cachan, France*
Licence 3 : Bachelor in mathematics
Courses taken : Algebra, Probabilities, Fourier and Hilbert Analysis, Integration, Ordinary Differential Equations, Differential Calculus, Complex Analysis, Partial Differential Equations, Quantum Mechanics
- 2015 – 2018 **Lycée Blaise Pascal** *Orsay, France*
Classe préparatoire aux grandes écoles : a selective undergraduate programme in the sciences preparing for the competitive entrance exam to the ENS
- 2012 – 2015 **Lycée Gustave Monod** *Enghien-les-Bains, France*
Baccalauréat, Scientific section – Option Mathematics : Qualification "Very good"
Abibac (Double Bachelor's degree with Germany, including a 3 months-long exchange in 2012 in Wiesbaden)

Work experience

- September 2022 - in progress **CERMICS** *ENPC, Champs-sur-Marne* – PhD
- PhD title : Mathematical and numerical analysis of electronic structure in moiré materials.
Directors : Éric Cancès and David Gontier
- April – July 2022 **CEREMADE** *Université Paris-Dauphine PSL, Paris* – Research internship
- Topic : Semiclassical analysis in moiré materials – Supervisors : David Gontier (CEREMADE) and Éric Cancès (CERMICS, École des Ponts ParisTech)
- May – August 2020 **CEREMADE** *Université Paris-Dauphine, Paris* – Research internship
- Topic : Topological invariant of the Kitaev chain – Supervisors : David Gontier (CEREMADE) and Domenico Monaco (Sapienza - Università di Roma)
- April – June 2019 **CMLA** *ENS Paris-Saclay, Cachan, France* – Research internship
- Topic : Image denoising for a Cauchy noise – Supervisor : Agnès Desolneux

Teaching

2022-2023 **ENS Paris** *rue d'Ulm, Paris*

1st semester : Supervision of a working group on Mathieu Lewin's book *Théorie spectrale et mécanique quantique* (M1 students).

2nd semester : Tutorials of the MATHematical Modelling lecture by Bertrand Maury (M1 students).

Publications

April 2022 Title : Symmetric Fermi projections and Kitaev's table : topological phases of matter in low dimensions. Co-author with David Gontier and Domenico Monaco.

Published in **Journal of Mathematical Physics** (Vol.63, Issue 4) on April 21st 2022.

o Journal of Mathematical Physics : <https://doi.org/10.1063/5.0084326>

Skills & Knowledge

Programming skills

LaTeX, *Advanced*

Python, *Advanced*

Julia, *Beginner*

Languages

French, *Mother tongue*

English, *Cambridge Advanced, level C1, Date taken : 11/5/2019*

German, *Abibac, level C1, Date taken : 7/7/2015*

Italian, *Beginner*

Other interests

- Tabletennis (practiced in club)
- Rugby union (practiced at university), current rugby union referee
- Cycling (currently practiced in club)
- Violin (played in orchestra)
- Vice-president of the Students Union of ENS Paris-Saclay in the year 2019
- Secretary of the humanitarian organization Solidarité Normalienne
- Member of the environmental group of ENS Paris-Saclay "Terre à terre"
- Member of the Students Union for Sport of ENS Paris-Saclay in the year 2019, and organiser of the Weekend of Sports