

**Mr GIRAND Arnaud**

Born the 22<sup>nd</sup> of April, 1989 in Paris XIe (France).  
French nationality.

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## CURRICULUM VITAE

### Career

Since 2016 **Full time teacher** affected in the Amiens zone (France).

2013–2016 **PhD Student** at the Institut de Recherche Mathématique de Rennes (IRMAR), under **Serge Cantat** and **Frank Loray**.

### Academic Curriculum

2016 **PhD in mathematics**, with thesis titled "*isomonodromy equations, algebraic solutions and dynamics*", defended on the 31st of August, 2016 at the Institut de Recherche Mathématique de Rennes.

◇ **Advisors** : Serge Cantat and Frank Loray.

◇ **Referees** : Oleg Lisovyy and Emmanuel Paul.

◇ **Jury members** : Guy Casale, Bertrand Deroin and Lucia Di Vizio (president of the jury).

2012 **Agrégation de mathématiques** (competitive exam used to recruit teachers). Rank : 39/308.

2011 **Research internship** (9 weeks) at the **Oxford Mathematical Institute** (United Kingdom) on expander graphs, under **Cornelia Drutu**.

2010 **Research internship** (7 weeks) at **Chevaleret mathematics laboratory** (Paris XIII) on mathematical quasicrystals, under **Paul Gérardin**.

2009–2013 Student at the **École normale supérieure de Cachan, Brittany extension** (now École normale supérieure de Rennes). **Bachelor's and Master's** (first and second year) **degrees** obtained with high honours.

### Teaching

Since 2016 **High and middle school teacher** affected as a substitute in various locations around Laon (France).

2013–2016 **Teaching assistant** in mathematics at the **École normale supérieure de Rennes**. Annual teaching duties divided as follows :

- lectures in algebra for students preparing the French *agrégation de mathématiques* ;
- mock oral exams for students preparing the French *agrégation de mathématiques* ;
- supervision of a reading group in algebra and geometry for masters students ;
- exercise sessions for third-year undergraduate students on "Ring theory and arithmetic" ;
- complementary lectures ("Introduction to dynamical systems") and supervision of a reading group for third-year undergraduate students.

2012–2013 **Oral examiner in mathematics** for preparatory classes at lycée Chateaubriand (Rennes). **Teaching assistant** at INSA Rennes (engineering school). Exercise sessions in both calculus and linear algebra for second and third-year undergraduate students.

2010–2011 **Oral examiner in mathematics** for preparatory classes at lycée Victor et Hélène Basch (Rennes).

## *Publications*

- ◇ **Algebraic Isomonodromic Deformations of the Five Punctured Sphere Arising From Quintic Plane Curves** (work in progress).
- ◇ **A New Two–Parameter Family of Isomonodromic Deformation Over the Five Punctured Sphere** (*Bulletin de la Société Mathématique de France* 144 (2) 339-368, arXiv:1507.02863).
- ◇ **Dynamical Green Functions and Discrete Schrödinger Operators with Potentials Generated by Primitive Invertible Substitution** (*Nonlinearity* 27 (3) 527-543, arXiv:1309.5714)

## *Talks*

- 2016 **Dynamical systems seminar** (Toulouse) — *"An example of isomonodromic deformation of the five punctured sphere"*  
**Algebra and geometry seminar** (Basel, Switzerland) — *"Isomonodromic deformations arising from quintic curves"*  
**Bernoullis Tafelrunde** [young researchers seminar] (Basel, Switzerland) — *"Isomonodromic deformations"*  
**Geometry seminar** (Rennes) — *"Katz's middle convolution"*  
**Junior ANR Lambda meeting** (Rennes) — *"Braids, loops and middle convolution"*  
**Seminar for young researchers in geometry** (Rennes) — 1 talk
- 2015 **Analytic geometry seminar** (Rennes) and **analysis seminar** (Strasbourg) — *"Isomonodromic deformations and algebraic solutions of Garnier systems"*  
**Workshop** on "Lie theory" (Rennes) — 1 talk  
**Seminar for young researchers in geometry** (Rennes) — 1 talk
- 2014 **Conference in honor of Michel Pierre** (ENS Rennes) — *"About monodromy"*  
**Ergodic theory seminar** (Amiens) — *"Character varieties and discrete Schrödinger operators"*  
**Workshop** on "Moduli spaces for Painlevé equations", ANR Iso-Galois (Strasbourg) — *"A family of affine cubic surfaces"*  
**Workshop** on "Mapping class groups" (Rennes) — 3 talks  
**Seminar for young researchers in geometry** (Rennes) — 2 talks
- 2013 **Geometry seminar** (Rennes) — *"Dynamical Green functions and discrete Schrödinger operators"*  
**Workshop** on "Moduli and isomonodromy" (ENS Paris) — *"Poncelet polygons and the Painlevé VI equation"*  
**Workshop** on "Mapping class groups" (Rennes) — 1 talk  
**Seminar for young researchers in geometry** (Rennes) — 3 talks

## *Administrative charges*

- 2014 Head of the organising comity for the **Rencontres Doctorales Lebesgue** (Rennes, first edition of a conference aimed at graduate students supported by the Centre Henri Lebesgue).

2013–2015 Organiser of the **seminar for young researchers in geometry** in Rennes.

## *Popularisation*

2016 **Jury member** for the Tournoi Français des Jeunes Mathématiciens et Mathématiciennes (Rennes).

**Supervision of a group of secondary school students** for three days as part of a popularisation activity at ENS Rennes.

2013–2015 Participation in the Rennes **science fair**, on behalf of the IRMAR.

2014 **Supervision of a group of secondary school students** for three days as part of a popularisation activity at ENS Rennes.

## *Miscellaneous*

### **Informatique**

- ◇ Use of Python and Objective Caml.
- ◇ Bases in C++.
- ◇ Use of Mathematica, Maple, Sage and Scilab.
- ◇ Use of L<sup>A</sup>T<sub>E</sub>X.
- ◇ Use of the Drupal content management system.
- ◇ Use of HTML.
- ◇ C2i2e (2012).

### **Sports**

- ◇ Modern fencing (épée, sabre).

### **Languages**

- ◇ French (native).
- ◇ English (fluent). **CLES2** (2011) and **TOEIC** : 990/990 (2010).
- ◇ Spanish (basic).