






# Felipe Arbulú

ATTACHÉ TEMPORAIRE D'ENSEIGNEMENT ET DE RECHERCHE

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## Professional Experience

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2023-2025    **Attaché Temporaire d'Enseignement et de Recherche**, LAMFA, Université de Picardie Jules Verne

## Education

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### Université de Picardie Jules Verne

LAMFA, Amiens, France

#### PHD IN MATHEMATICS

2020 - 2024

- Thesis: Spectral analysis of finite topological rank  $\mathcal{S}$ -adic subshifts
- Advisor: Fabien Durand

### Université Paris-Saclay

IMO, Orsay, France

#### MS IN MATHEMATICS

2019 - 2020

- Thesis: Periodicity and ergodicity in the trihexagonal tiling
- Advisor: Samuel Lelièvre

### Universidad de Chile

FCFM, Santiago, Chile

#### MS IN ENGINEERING MENTION MATHEMATICS

2017 - 2018

### Universidad de Chile

FCFM, Santiago, Chile

#### CIVIL ENGINEERING MENTION MATHEMATICS

2012 - 2018

- Thesis: Contributions to the study of eigenvalues and weak mixing for interval exchange transformations and affine geometric systems
- Advisor: Alejandro Maass

### Universidad de Chile

FCFM, Santiago, Chile

#### BS IN ENGINEERING MENTION MATHEMATICS

2012 - 2015

## Publications

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### PUBLISHED

**The Jacobs–Keane theorem from the  $\mathcal{S}$ -adic viewpoint.** Arbulú, Felipe, Durand, Fabien and Espinoza, Bastián. 2024. *Discrete Contin. Dyn. Syst.* pp. 3077–3108. doi: 10.3934/dcds.2024052 • arXiv: 2307.10663.

**Dynamical properties of minimal Ferenczi subshifts.** Arbulú, Felipe and Durand, Fabien. 2023. *Ergodic Theory Dynam. Systems.* pp. 3923–3970. doi: 10.1017/etds.2023.7 • arXiv: 2207.14097.

## Awards, Honors and Grants

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- 2020 **Becas Chile (scholarship for PhD. studies abroad)**, Chilean Government
- 2019 **Master 2 scholarship**, Fondation Mathématique Jacques Hadamard, France
- 2017 **Beca de Excelencia CMM (graduate scholarship)**, Center for Mathematical Modeling, Chile
- 2016 - 2017 **Beca Bicentenario (undergraduate scholarship)**, Ministry of Education, Chile
- 2016 - 2017 **Summer Scholarship**, Instituto de Matemática Pura e Aplicada, Brazil
- 2013 - 2017 **Outstanding Student**, FCFM, Universidad de Chile, Chile
- 2011 **Participation**, International Mathematical Olympiad, Netherlands
- 2010 **Honorable Mention**, Iberoamerican Mathematical Olympiad, Paraguay
- 2010 **Participation**, Cono Sur Mathematical Olympiad, Brazil
- 2007 - 2011 **Medalist**, National Mathematical Olympiad, Chile

## Talks

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### CONFERENCES

- June 30, 2024. **The Jacobs–Keane theorem from the  $\mathcal{S}$ -adic viewpoint.**  
Workshop ANR IZES, Île de Porquerolles, France.
- May 13, 2024. **The Jacobs–Keane theorem from the  $\mathcal{S}$ -adic viewpoint.**  
Dynamics on zero-dimensional spaces: new connections, Leiden, Netherlands.
- July 7, 2023. **Dynamical properties of minimal Ferenczi subshifts.**  
Dyadisc 6. Dynamics on the Cantor set and applications, Amiens, France.
- June 17, 2022. **Dynamical properties of minimal Ferenczi subshifts.**  
Dyadisc 5.  $\mathcal{S}$ -adicity, Liège, Belgium.
- November 29, 2021. **Dynamical properties of symbolic rank one subshifts.**  
SDA2: Systèmes Dynamiques, Automates et Algorithmes, Caen, France.
- July 8, 2021. **Online Poster: Rank one subshifts.**  
Dyadisc4. Problèmes ouverts en dynamique de faible complexité, Amiens, France.

### SEMINARS

- May 31, 2023. **Dynamical properties of minimal Ferenczi subshifts.**  
Séminaire de Mathématiques discrètes, Liège, Belgium.
- February 2, 2023. **Dynamical properties of minimal Ferenczi subshifts.**  
Séminaire équipe ADA, Calais, France.
- January 10, 2023. **Dynamical properties of minimal Ferenczi subshifts.**  
Séminaire Ernest, Marseille, France.
- March 30, 2021. **Dynamical properties of symbolic rank one subshifts.**  
Séminaire Dynamique et Probabilités, Amiens, France.

## Teaching

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Spring 2025	<b>M1S2: Systèmes dynamiques</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2025	<b>M1S2: Modélisation aléatoire</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2025	<b>L1S2: Analyse réelle appliquée</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2025	<b>L1S2: Analyse réelle fondamentale</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2025	<b>L1S2: Probabilités et statistique</b> , Teaching Assistant	<i>UPJV, France</i>
Fall 2025	<b>L1S1: Méthodes et Techniques de Calcul</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2024	<b>M1S2: Systèmes dynamiques</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2024	<b>M1S2: Modélisation aléatoire</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2024	<b>L1S2: Analyse réelle appliquée</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2024	<b>L1S2: Analyse réelle fondamentale</b> , Teaching Assistant	<i>UPJV, France</i>
Spring 2024	<b>L1S2: Probabilités et statistique</b> , Teaching Assistant	<i>UPJV, France</i>
Fall 2022	<b>L1S1: Méthodes et Techniques de Calcul</b> , Teaching Assistant	<i>UPJV, France</i>
Fall 2018	<b>MA5112: Differential and Riemannian Geometry</b> , Teaching Assistant	<i>FCFM, Chile</i>
Fall 2017	<b>MA5112: Differential and Riemannian Geometry</b> , Teaching Assistant	<i>FCFM, Chile</i>

## Other activities

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### PEER REVIEW

Journals. Theoretical Computer Science.

### MATH OLYMPIAD TRAINER

Trainer of the Chilean team for international mathematical competitions between 2020 and 2023.

## Skills

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### PROGRAMMING

• Python • C++ • SageMath •  $\text{\LaTeX}$  • MATLAB • Git

### LANGUAGES

- Spanish: First language
- English: Fluent
- French: Proficient
- Portuguese: Beginner