

# Christopher Cabezas

## Curriculum Vitæ

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### Education

2022(expected) **Ph.D in Mathematics**, *Université de Picardie Jules Verne*, France.

Thesis advisor: Samuel Petite

Thesis title: Automorphisms of multidimensional symbolic systems.

2019 **Master 2 in Fundamental Mathematics**, *Sorbonne Université*, France.

Thesis advisor: Carlos Matheus

Thesis title: Anosov mapping class actions on the  $SU(2)$ -representation variety of a punctured torus.

2018 **Master of Science in Engineering (Mention in Applied Mathematics)**, *Universidad de Chile*, Chile.

Thesis advisor: Alejandro Maass

Thesis Co-advisor: Sebastian Donoso

Thesis title: Cubos dinámicos direccionales para  $\mathbb{Z}^d$ -sistemas nimiales.

### Research interests

My research interests are mainly centered in Multidimensional symbolic dynamics, Topological dynamics and Ergodic theory for  $\mathbb{Z}^d$ -actions and its interactions with different fields of mathamtics, such as automata theory, combinatorics on words, finite geometry, fractal geometry, and number theory.

### List of Publications

1. C. Cabezas, S. Donoso, and A. Maass. Directional dynamical cubes for minimal  $\mathbb{Z}^d$ -systems. *Ergodic Theory Dynam. Systems*, 40(12):3257-3295, 2020.
2. C. Cabezas. Homomorphisms between multidimensional constant-shape substitutions. *arXiv preprint arXiv:2106.10504*, 2021.

### Presentations

#### Talks

- 2021 Extended Symmetries in Symbolic Dynamics, 18 - 19 October 2021, Bielefeld (Germany).
- 2021 Journées annuelles du GDR AMA, 26 - 30 September 2021, Porquerolles (France).
- 2021 Séminaire de mathématiques discrètes de l'Université de Liège, 21 September 2021, Liège (Belgium).

- 2021 Invariants combinatoires et algébriques des décalages et des pavages, 11 - 15 January 2021, Marseille (France).
- 2020 Journées SDA2 2020 : Systèmes Dynamiques, Automates & Algorithmes, 3 - 4 December 2020, Caen (France).

### Posters

- 2021 Dyadisc4 : Dynamique et Analyse Discrète : problèmes ouverts en dynamique de faible complexité, 8 - 9 July 2021, Amiens (France).

## Teaching Experience

- 2014 - 2018 **Teaching Assistant**, *Departamento de Ingeniería Matemática*, Universidad de Chile.  
Introduction to Dynamical Systems and Ergodic Theory, Convex Analysis and Duality, Functional Analysis, Measure Theory, General Topology, Multivariable Calculus, Linear Algebra.
- 2018 **Teaching Assistant**, *Escuela de Ingeniería*, Universidad de O'Higgins, Rancagua, Chile..  
Multivariable Calculus, Introduction to Discrete Mathematics.
- 2014 **Teaching Assistant**, *Departamento de Ciencias de la Computación*, Universidad de Chile.  
Discrete Mathematics for Computer Science.

## Languages

- Spanish Native.
- English C1.
- French B1.

## Programming Skills

- $\text{\LaTeX}$ .
- Matlab.
- Python.