

Victor Fuentes Labra

PhD student in Mathematics

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Education

- 2028 **PhD in Mathematics**, University of Brest UBO, France.
 - **Thesis** "*Biharmonic maps from the torus to the sphere and the Cosserat energy between Riemannian manifolds*" under the supervision of Dr. **Éric Loubeau**.
- 2024 **Master 2 in Fundamental Mathematics**, University of Rennes 1, France.
 - **M.Sc. Thesis**: "*Classical results in comparison geometry*" supervised by Dr. **Juan Souto**.
- 2021 **Master in Mathematics**, University of Valparaíso, Chile.
 - **M.Sc. Thesis**: "*The Schwarzschild metric as a solution to Einstein's field equations*," supervised by Dr. **Rodrigo Castro**.
- 2015 **Bachelor (Mathematical education)**, University of Playa Ancha, Chile.
 - **B.Sc. Thesis**: "*Proposal for an appropriate mathematical model for high school that describes electromagnetic phenomena associated with the Special Theory of Relativity*," supervised by Dr. **Alejandro Nettle**.

Research Interests

- Differential geometry, Geometric analysis, Mathematical-physics, Lorentzian geometry, Mathematical General Relativity.

Scholarships and fundings

- Public doctoral contract, University of Brest UBO, France.
- UV Masters Scholarships in Mathematics, University of Valparaíso, Chile.
- Government funding for bachelor degree 'Beca Bicentenario', Chile.

Research Experiences

- Jun 2024 **University of Rennes 1**, Research internship supervised by Dr. Juan Souto.
◦ *Classical results in comparison geometry: interaction between local and global properties of a Riemannian manifold.*
- Dec 2023 **University of Rennes 1**, Research Seminar supervised by Dr. Léo Bigorgne.
◦ *Solutions of massless Vlasov equation on a fixed FLRW background with \mathbb{R}^3 spatial topology.*
- May 2021 **University of Valparaíso**, Research group supervised by Dr. Rodrigo Castro.
◦ *Simple pseudopotential generalization for the KdV equation using the modified Camassa–Holm equation.*

Teaching Experiences

Department of Mathematics, University of Valparaíso, Chile.

- Spring 2021 **Fixed-term lecturer**, LFIS113/LICBQ124/IECD122/PLCBQ125/PL122 Calculus I, 1st year.
- Spring 2021 **Fixed-term lecturer**, PL121 Euclidean Geometry, 1st year Bachelor course.
- Fall 2021 **Fixed-term lecturer**, LFIS113 Calculus I, 1st year Bachelor course.
- Spring 2020 **Fixed-term lecturer**, LICBQ124/IEST122/PL122 Calculus I, 1st year.
- Spring 2020 **Fixed-term lecturer**, PL121 Euclidean Geometry, 1st year Bachelor course.
- Fall 2020 **Fixed-term lecturer**, LFIS113 Calculus I, 1st year Bachelor course.
- Fall 2020 **Fixed-term lecturer**, MAT120 Euclidean and Non-euclidean Geometry, 1st year Bachelor course.

Department of Mathematics, Pontifical Catholic University of Valparaíso, Chile.

- Fall 2019 **Fixed-term lecturer**, MATH265-3 Calculus II, 2nd year for Industrial engineering bachelor course.

Department of Mathematics, Liceo Santa Teresa de Valparaíso, Chile.

- 2016-2020 **High school math teacher.**
- In all these courses I was responsible for creating lesson plans and course material, as well as checking and assessing students work.
 - The language of instruction was Spanish.
 - Teaching and examining was moved online since April 2020 due to the COVID-19 pandemic.

Additional training

- Mathematics tutoring (Complétude), Rennes, 2024 - 2025.
- Introduction to Optimal Control and Machine Learning (University of Sevilla), e-learning, October 2024.
- Intro to Midjourney (Codeacademy), e-learning, April 2024.
- Learn Python 3 (Codeacademy), e-learning, April 2023.
- B1 French language training (CLPS), Rennes, France, December 2022.
- Introduction to Cryptography by Christof Paar (Understanding Cryptography), e-learning, September 2022.
- Introduction to coffee (TallerCafé), Valparaíso, Chile, Enero 2022.
- Prevention and fire fighting (SENCE), Chile, November 2019.
- X Days of Mathematics IMUV (University of Valparaiso), Chile, December 2018.
- Didactics, teaching and learning methodologies focused on the classroom (IST), Viña del Mar, Chile, August 2018.
- Resilience education in the school context (SENCE), Viña del Mar, Chile, July 2016.

Languages

- **Spanish:** Native language.
- **French:** Professional proficiency.
- **English:** Professional proficiency.

Academic references

LMBA, University of Brest UBO, France.

- **Dr. Éric Loubeau** (*PhD supervisor*) loubeau@univ-brest.fr

IRMAR, University of Rennes 1, France.

- **Dr. Juan Souto** (*Intership supervisor*) juan.souto@univ-rennes1.fr

Department of Mathematics, University of Valparaiso, Chile

- **Dr. Rodrigo Castro** (*Master's thesis supervisor*) rodrigo.castrom@uv.cl