

Loth Damagui CHABI

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ABOUT ME

I am a second year PhD student under **Philippe SOUPLET** at "Laboratoire d'Analyse Géométrie et Applications" (**LAGA**), in "Université Sorbonne Paris Nord" (**USPN**) on the asymptotic blow-up behavior and Liouville-type properties for nonlinear parabolic equations (see [project](#) for more details).

RESEARCH AREAS

Qualitative analysis of partial differential equations (Nonlinear Heat and Hamilton - Jacobi equations), Functional analysis.

EDUCATION

PhD project in Mathematic 2023 - 2026

Laboratoire d'Analyse Géométrie et Applications (**LAGA** - **USPN**)

Master of Mathematics Research (M2) 2022 - 2023

Université Sorbonne Paris Nord

Masters of Fundamental Mathematics and Applications (M1 - M2) 2020 - 2022

Institut de Mathématiques et de Science Physique (**IMSP**), **Dangbo - Bénin**

Undergraduate at IMSP: 2017 - 2020

- **1st and 2nd years:** "Classes Préparatoires Scientifiques et Technologiques **MPSI-PCSI**": October 2017 - June 2019
- **3rd year:** "Licence spéciale des classes préparatoires", **option** mathematics: September 2019 - August 2020

RESEARCH PROJECTS

Research internship M2 - USNP (May & June 2023):

"Non-linear Dirac equation for nucleons" under **Simona ROTA NODARI** (Université Côte d'Azur)

Research internship M2 - IMSP (June - August 2022):

"Study of the linearized Ginzburg - Landau operator" under **Rémy RODIAC** (Université Paris - Saclay)

Short research projet L3 - IMSP (July 2020):

"Measure of non - compactness and its applications" under Guy DEGLA (IMSP - Bénin)

PRESENTATIONS

Conference talks

- ✓ Mostly Maximum Principle, **PUC - Rio de Janeiro** (June 24 - 28, 2024)
- ✓ Modern Methods in Nonlinear Elliptic and Parabolic PDE, **ICMS - Plovdiv** (May 27 - 31, 2024)
- ✓ Euro-Japanese Conference on Nonlinear Diffusion (without talk), **ICMAT - Madrid** (October 16 - 20, 2023)

Class presentations

- ✓ PhD Seminar (LAGA), USPN - Villetaneuse (February 15 & May 23, 2024)

PUBLICATIONS

Journal Articles

- ✓ Asymptotic blow-up behavior for the semi-linear heat equation with non scale invariant nonlinearity, *Journal of Differential Equations* (2025).
- ✓ Refined behavior and structural universality of the blow-up profile for the semi-linear heat equation with non scale invariant nonlinearity (with Philippe Souplet), *Math. Annalen* (2024)

Preprint

- ✓ Refined blow-up behavior for reaction-diffusion equations with non scale invariant exponential nonlinearities. Preprint (2025) [arXiv:2502.06426](#)

TEACHING

2024 - 2025

Semester 1

- "Analysis 3: Numerical series and generalized integrals" (2nd year undergraduate, Mathematics and Computer Science)

Semester 2

- "Algebra 1: Introduction to mathematical structures" (1st year undergraduate, Mathematics and Computer Science (PAM track))

2023 - 2024

Semester 1

- "Analysis 3: Numerical series and generalized integrals" (2nd year undergraduate, Computer Science)
- "Analysis 1: Numerical sequences and usual functions" (1st year undergraduate, Mathematics)

Semester 2

- "Algebra 1: Introduction to mathematical structures" (1st year undergraduate, Mathematics and Computer Science (PAM track))

SCHOLARSHIPS & FUNDING

- September 2023 - : PhD project at LAGA-USPN
- September 2022-August 2023: **PGSM** scholarships for M2 Mathematics at USPN
- September 2020-August 2022: **CEA-SMIA** Scholarships for the master Mathematics at IMSP
- September 2017-August 2020: "Bourse d'excellence du gouvernement Béninois" for Undergraduate at IMSP