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

- ✓ Non-linear elliptic PDE in Hauts-de-France - fourth edition (without talk), Calais-France (June 16-19, 2025)
- ✓ Journées EDP 2025 (without talk), Centre Paul Langevin-Aussois- France (June 2-6, 2025)
- ✓ 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 Students Seminar & Others. CY Cergy Paris Université (France) (April 29, 2025)
- ✓ PhD Seminar (LAGA), USPN - Villetaneuse (February 15 & May 23, 2024; April 17, 2025)

PUBLICATIONS

Journal Articles
- ✓ Refined blow‑up behavior for reaction‑diffusion equations with non‑scale invariant exponential nonlinearities, J. Dyn. Differ. Eq. (2025). ArXiv:2502.06426
- ✓ Asymptotic blow‑up behavior for the semi‑linear heat equation with non scale invariant nonlinearity, Journal of Differential Equations (2025), arXiv:2409.12660.

- ✓ 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 (2025), arXiv:2404.11863.

Preprint
- ✓ Classification of entire and ancient solutions of the diffusive Hamilton‑Jacobi equation (with Philippe Souplet), arXiv:2507.12214.
- ✓ Optimal Hamilton‑type gradient estimates for the heat equation on noncompact manifolds (with Philippe Souplet), arXiv:2507.12190.

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‑August 2026: 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 gourvernement Béninois" for Undergraduate at IMSP