

Billel Guelmame

Curriculum Vitae

46 allée d'Italie, 69007 Lyon
UMPA, École Normale Supérieure de Lyon
☎ +33(0)659937763

✉ billel.guelmame@ens-lyon.fr

<http://perso.ens-lyon.fr/billel.guelmame>



Ph.D. of Mathematics, University Côte d'Azur, 2020

Personal information

Civil status Married
Birth Batna (Algeria), October 2, 1993
Languages Arabic (native), French and English (fluent)
Citizenship Algerian-French

Research topics

Nonlinear hyperbolic partial differential equations
Conservation laws
Nonlinear water waves
Stochastic PDEs

Academic Positions

2022 - now *Postdoc*, École Normale Supérieure de Lyon, France
- 2022 - 2023: Employed by CNRS
- 2023 - 2024: Employed by LABEX MILYON
- Supervisor: Julien Vovelle

2020 - 2022 *Temporarily Attached to Education and Research (ATER)*, University Côte d'Azur, Nice, France

Education

2017–2020 **Ph.D.** of mathematics at the University Côte d'Azur, Nice, France
Supervisors: Didier Clamond and Stéphane Junca
Ph.D. thesis: On a Hamiltonian regularisation and regularity of entropy solutions of some nonlinear hyperbolic equations
Reporters:
- Adrian Constantin, Professor, University of Vienna
- Philippe G. LeFloch, Research Director, Sorbonne University
Composition du jury:
- Didier Clamond, Professor, University Côte d'Azur
- Adrian Constantin, Professor, University of Vienna
- Isabelle Gallagher, Professor, École Normale Supérieure Paris
- Sergey Gavrilyuk, Professor, Aix-Marseille University
- Paola Goatin, Research Director, Inria Sophia Antipolis
- Boris Haspot, Maître de conférences, Paris-Dauphine University
- Stéphane Junca, Maître de conférences, University Côte d'Azur

2016–2017 **Master 2** of Pure and Applied Mathematics at the University Côte d'Azur, Nice, France
2015–2016 **Master 1** of mathematics, PDEs and applications at the University of Batna 2, Algeria

2012–2015 **BS degree (Licence)** in fundamental mathematics at the University of Batna 2, Algeria

Participation to events

- Nov 2023 Journées EDP Rhône-Alpes-Auvergne, Clermont-Ferrand, France
- June 2023 Summer school “New Trends in Mathematical Fluid Dynamics”, Grenoble, France
- March 2023 Journées Jeunes EDPistes, Tours, France
- March 2023 Local and non-local aspects in fluid mechanics, Lyon, France
- Dec 2022 Conference MathFlows, CIRM, Marseille, France
- Nov 2022 Journées EDP Rhône-Alpes-Auvergne, Lyon, France
- June 2022 Summer school on fluids and turbulence, Lyon, France
- June 2022 International Conference on Hyperbolic Problems, Theory, Numerics and Applications, Málaga, Spain
- June 2022 Journées Nice–Toulon–Marseille, Porquerolles, France
- Nov 2021 About the Saint-Venant equations, University Aix-Marseille, France
- Aug 2021 Advanced Summer School in Mathematical Fluid Dynamics, Cargese, Corsica, France
- Jun 2021 Nice–Toulon–Marseille days, Porquerolles, France
- Sep 2019 Inhomogeneous Flows: Asymptotic Models and Interface Evolution, CIRM, Marseille, France
- Jun 2019 Waves Côte d’Azur, Nice, France
- May 2019 Colloquium of LJAD’s Ph.D. students, Barcelonnette, France
- Nov 2018 GDR MecaWave, Fréjus, France
- Jun 2018 PDE days 2018, Obernai, France
- May 2018 Nice–Toulon–Marseille days, Porquerolles, France
- May 2018 Colloquium of LJAD’s Ph.D. students, Peyresq, France

Selected talks

- Mar 2024 Seminar A3, Amiens, France
- Feb 2024 *Virtual.* PM-EDP Seminar, Galilée Institute, France
- Feb 2024 MAC Seminar at IMT, Toulouse, France
- Jan 2024 Applied Math And Analysis Seminar at Duke University, United States
- Nov 2023 EDP Rhône-Alpes-Auvergne 2023 Days, Clermont-Ferrand, France
- Oct 2023 UMPA, ENS Lyon, France
- Mar 2023 Young EDPists Days, Tours, France
- Dec 2022 *Virtual.* Quebec Analysis and Related Fields Seminar, Laval University, Canada
- Dec 2022 MathFlows Conference, CIRM, Marseille, France
- Nov 2022 “Jeunes analystes et modélisateurs lyonnais” Days, Lyon, France
- Oct 2022 Seminar of the *Physique Mathématique - EDP* team, Bordeaux, France
- Jun 2022 International Conference on Hyperbolic Problems, Málaga, Spain
- Jun 2022 Seminar of the EDPAN team, LJAD, Nice, France
- Oct 2021 *Virtual.* Tassili Sunday Maths Seminar
- Jan 2021 *Virtual.* TIFR, Bangalore, India
- Nov 2018 MecaWave, Fréjus, France
- Mar 2018 LJAD, Nice, France

Awards & Grants

- 2016–2017 Master excellence scholarship from J.A.Dieudonné mathematics laboratory, Nice, France
- 2022–2023 UMPA-CNRS Postdoctoral Fellowship, Lyon, France
- 2023–2024 LABEX MILYON Postdoctoral Fellowship, Lyon, France

International stays

2019 TIFR–CAM, Bangalore, India, two weeks

Organized events

May 2019 Colloquium of LJAD's Ph.D. students, Barcelonnette, France

Preprints and publications

• Preprints

11. B. Guelmame and J. Vovelle. Global dissipative martingale solutions to the variational wave equation with stochastic forcing. 2023. [hal-04282928](#)

• Published/Accepted papers

10. B. Guelmame and H. Houamed. Convergence rate for a regularized scalar conservation law. To appear in *Zeitschrift für Angewandte Mathematik und Physik*. 2024. [hal-04493491](#)
9. B. Guelmame. On a Hamiltonian regularization of scalar conservation laws. *Discrete Contin. Dyn. Syst. A*. 2024. [hal-02512810](#)
8. B. Guelmame. Global weak solutions of the Serre–Green–Naghdi equations with surface tension. *Annales de l'Institut Henri Poincaré C, Analyse non linéaire*. 2023. [hal-03585433](#)
7. B. Guelmame. On the blow-up scenario for some modified Serre–Green–Naghdi equations. *Nonlinear Analysis*. 2022. [hal-03264688](#)
6. B. Guelmame, D. Clamond and S. Junca. Local well-posedness of a Hamiltonian regularisation of the Saint-Venant system with uneven bottom. *Methods and Applications of Analysis*. 2022. [hal-02915262](#)
5. B. Guelmame, S. Junca, D. Clamond and R. Pego. Global weak solutions of a Hamiltonian regularised Burgers equation. *J. Dynam. Differential Equations*. 2022. [hal-02478872](#)
4. C. Bourdarias, A.P. Choudhury, B. Guelmame and S. Junca. Entropy solutions in BV^s for a class of triangular systems involving a transport equation. *SIAM J. Math. Anal.* 2022. [hal-02895603](#)
3. B. Guelmame, D. Clamond and S. Junca. Hamiltonian regularisation of the unidimensional barotropic Euler equations. *Nonlinear Anal. Real World Appl.* 2022. [hal-02907304](#)
2. S. Ghoshal, B. Guelmame, A. Jana and S. Junca. Optimal regularity for all time for entropy solutions of conservation laws in BV^s . *NoDEA Nonlinear Differential Equations Appl.* 2020. [hal-02495036](#)
1. B. Guelmame, S. Junca and D. Clamond. Regularizing effect for conservation laws with a Lipschitz convex flux. *Commun. Math. Sci.* 2019. [hal-01943834](#)