

Ayman Rimah Said

Current employment

Fall 23– **Research Associate**, *Cambridge University*, Cambridge, United Kingdom

Academic professional experience

Fall 21 – **Griffiths Research Assistant Professor**, *Duke University*, Durham, NC, USA
Spring 23

Spring 21 **Program Associate in the Mathematical Problems In Fluid Dynamics**, *MSRI*, Berkeley, USA

9/18–6/21 **PhD**, *ENS Paris Saclay*, Paris, France

9/19–9/20 **Teaching Assistant**, *Université de Paris Sud*, Paris, France

9/18–9/19 **Teaching Assistant**, *ENS Paris Saclay*, Paris, France

Studies

9/18–6/21 **ENS Paris Saclay**, Paris, France

Thesis: "On the regularity of the flow of the Euler system with free Boundary"

9/17–6/18 **École Polytechnique-Université de Paris Sud- Paris Saclay**, Paris, France

Masters 2 in theoretical mathematics: M2 AAG, the Title of "Polytechnician Engineer".

9/14–3/17 **École Polytechnique**, Paris

Generalist engineering diploma, Bachelors in mathematics and physics and Masters 2 in theoretical mathematics.

9/13–7/14 **Classes préparatoires of lycée Hoche**, Versailles, France

Mathematics and Physics (MP*).

Funding

8/23– **Research Associate at Cambridge University**, funded by UKRI grant SWAT.

8/21–8/23 **Phillip Griffiths Assistant Research Professor of Mathematics at Duke University**, Partially funded by NSF grants DMS-2043024 and DMS-2124748.

9/18–9/21 **Doctoral Grant AMX**, École Polytechnique

Published Articles

1. **A geometric proof to the Quasi-linearity of the Water-Waves system**, SIAM Journal on Mathematical Analysis, 2023
2. **On the Cauchy problem for dispersive Burgers type equations**, Indiana University Mathematics Journal, 2023
3. **On Paracomposition and change of variables in Paradifferential operators**, Journal of Pseudo-Differential Operators and Applications, 2023
4. **Regularity results on the flow map of periodic dispersive Burgers type equations and the Gravity-Capillary equations**, Water Waves, 2023

Preprints in the peer review process

5. **On the long-time behavior of scale-invariant solutions to the 2d Euler equation and applications**, with T. M. Elgindi and R. M. Murray, arXiv preprint, arXiv:2211.08418

6. **Logarithmic spirals for 2d perfect fluids**, with *I.-J. Jeong*, arXiv preprint, arXiv:2302.09447
7. **Wellposedness and singularity formation beyond the Yudovich class**, with *T. M. Elgindi and R. M. Murray*, arXiv preprint, arXiv:2312.17610
8. **Small scale creation of the Lagrangian flow in 2d perfect fluids**, arXiv preprint, arXiv:2401.06476
9. **A quantitative DiPerna-Lions theory and mixing bounds for passive scalar transport**, with *L. Huysmans*, arXiv preprint, arXiv:2402.11642

Conferences and talks

Talks at International conferences

- 02/24 **Conference talk: Nonlinear Waves and Hamiltonian PDEs**, *Courmayeur*, Italy
- 01/24 **Conference at HCMC: Fluids in Seoul 2024**, *Seoul*, South Korea
- 9/23 **Workshop talk: Enjoying probability and fluids in Lausanne**, *Lausanne*, Switzerland
- 6/22 **Conference talk at the Oberwolfach Workshop on Nonlinear Waves and Dispersive Equations**, *The Mathematisches Forschungsinstitut Oberwolfach*, Germany
- 6/22 **Conference talk at the workshop on small scale dynamics in fluid motion**, *Simons Center for Geometry and Physics, Stony Brook University*, USA
- 4/22 **Conference talk at the AMS special session on Fluid Mechanics**, *Seattle*, USA
- Spring 21 **Graduate talk at the Mathematical Problems In Fluid Dynamics program**, *MSRI, Berkeley*, USA

Talks at analysis seminars

- 02/24 **Seminari Vito Volterra**, *Rome*, Italy
- 02/24 **Workshop: Nonlinear Waves and Hamiltonian PDEs**, *Courmayeur*, Italy
- 12/23 **ENS Lyon analysis seminar**, *Lyon*, France
- 10/23 **Imperial college analysis seminar**, *London*, UK
- 10/23 **Analysis seminar**, *IMB, Bordeaux*, France
- 3/23 **Analysis of Fluids & Related Topics Seminar**, *Princeton University*, USA
- 3/23 **Analysis seminar**, *North Carolina State University*, *Raleigh*, USA
- 3/23 **Analysis seminar**, *Université de Reims*, *Reims*, France
- 2/23 **PDE seminar**, *University of Maryland*, *Maryland*, USA
- 1/23 **Analysis seminar**, *École Polytechnique*, *Paris*, France
- 10/22 **Analysis seminar**, *Posetech*, *Pohang*, South Korea
- 9/22 **Analysis seminar**, *Seoul National University*, *Seoul*, South Korea
- Spring 20 **Graduate students seminar**, *Université Paris-Saclay*, *Orsay*, France

Upcoming invited Talks

- 4/24 **EPFL analysis seminar**, *Lausanne*, Switzerland
- 4/24 **Duke analysis seminar**, *Durham*, USA
- 7/24 **Alhambra PDE days**, *Granda*, Spain
- 8/24 **Workshop: Patterns in solutions to the incompressible Euler equations**, *Bedlewo*, Poland

Attended conferences

- 6/23 **New Trends in Mathematical Fluid Dynamics**, *Institut Fourier*, Grenoble, France
- 19 **Inhomogeneous Flows: Asymptotic Models and Interfaces Evolution**, *CIRM*, Marseille, France
- 19 **Journées EDP 19**, *Obernai*, France

Teaching

- 18–19 **Tutorials on functional Analysis, Masters 1**, *ENS Paris Saclay, Paris*
- 18–19 **Lectures on Distributions for Aggregation, Masters 2**, *ENS Paris Saclay, Paris*
- 19–20 **Tutorials in Calculus, Bachelors 1**, *Paris-Sud University, Paris*
- 19–20 **Lectures on Dynamical Systems for Biology, Bachelors 3**, *Paris-Sud University, Paris*
- 21–23 **Ordinary and partial differential equations, Math 353**, *Duke University, Durham*
- 21–23 **Elliptic PDE, Graduate course**, *Duke University, Durham*

Previous Professional Experience

- 3/17–9/17 **Research Internship**, *IMPA, Rio, Brazil*
- 6/16–9/16 **Actuarial Studies**, *AXA France, Paris*
 - Survival studies of populations for special insurance products.
- 10/14–4/15 **Teaching assistant**, *Académie De Toulouse, Lycée de La Borde Basse, Toulouse*
- 9/14–10/14 **Officer Cadet Training**, *French Army: École Polytechnique, France*