

# Basile Radisson

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(updated February 10th 2024)

## Career and education

- 2024 - **Postdoc**, *Institut Jean le Rond d'Alembert, Sorbonne Université, Paris*  
Advisor : Anaïs Abramian, Claire Lestringant
- 2022 - 2023 **Postdoc**, *Non Linear Physical Chemistry Unit, Université Libre de Bruxelles, Brussels*  
Advisor : Fabian Brau
- 2019 - 2022 **Postdoc**, *Kanso Lab, University of Southern California , Los Angeles*  
Advisor : Eva Kanso
- 2015 - 2019 **PhD Thesis**, *IRPHÉ, Aix-Marseille Université , Marseille*  
Non-linear dynamics of flame fronts : experiments and modelling  
Advisors : Christophe Almarcha, Bruno Denet
- 2015 **Master Thesis**, *LMFA, Université Lyon 1 , Lyon*  
Linear stability analysis in plane channel flow with variable density (Non Boussinesq)  
Advisors : Bastien Di-Pierro, Marc Buffat
- 2014 - 2015 **MSc Research in fluid mechanics**, *Université Claude Bernard , Lyon*

## Publications

1. **Designing Shape Transitions in Elastic Structures**, B. Radisson, E. Kanso – Journal of the Physical Society of Japan (2023).
2. **Nonlinear dynamics of upward propagating flames**, M. Battikh, E. Al Sarraf, B. Radisson, C. Almarcha, B. Denet – Physical Review E (2023).
3. **The  $\theta$ -formulation of the 2D elastica – Buckling and boundary layer theory**, G. Kozyreff, E. Siéfert, B. Radisson, F. Brau – Proceedings of the Royal Society A (2023). – *On the cover*
4. **Dynamic behavior of elastic strips near shape transitions**, B. Radisson, E. Kanso – Physical Review E (2023)
5. **Elastic snap-through instabilities are governed by geometric symmetries**, B. Radisson, E. Kanso – Physical Review Letters (2023). – *Editors' suggestion*
6. **Forcing of a flame by a periodic flow in a Hele-Shaw burner**, B. Radisson, B. Denet, C. Almarcha – Physical Review Fluids (2022) .
7. **Nonlinear dynamics of flame fronts with large-scale stabilizing effects**, B. Radisson, B. Denet, C. Almarcha – Physical Review E (2021).
8. **Nonlinear dynamics of premixed flames : from deterministic stage to stochastic influence.**, B. Radisson, B. Denet, C. Almarcha – Journal of Fluid Mechanics (2020).
9. **Experimental and numerical Lattice-Boltzmann investigation of the Darrieus-Landau instability**, M. Tayyab, B. Radisson, C. Almarcha, B. Denet, P. Boivin – Combustion and Flame (2020)

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10. **Coupling of vibro-acoustic waves with premixed flame**, B. Radisson, J. Piketty-Moine, C. Almarcha – *Physical Review Fluids* (2019).
11. **Darrieus-Landau instability and Markstein numbers of premixed flames in a Hele-Shaw cell**, E. Al Sarraf, C. Almarcha, J. Quinard, B. Radisson, B. Denet, P. L. Garcia Ybarra – *Proceedings of the Combustion Institute* (2019).
12. **Interface dynamics, pole trajectories, and cell size statistics**, C. Almarcha, B. Radisson, E. Al Sarraf, E. Villermaux, B. Denet, and J. Quinard – *Physical Review E* (2018).
13. **Quantitative analysis of flame instabilities in a Hele-Shaw burner**, E. Al Sarraf, C. Almarcha, J. Quinard, B. Radisson, B. Denet – *Flow, Turbulence and Combustion*, 1-18. (2018).

## Conferences and Seminars (speaker underlined)

- **Elastic snap-through instabilities are governed by geometric symmetries**, *Rencontre du Non-Linéaire 2023*, B. Radisson, E. Kanso – (Poster Presentation)
- **Designing elastic snap-through instabilities**, *Rencontre du Non-Linéaire 2022*, B. Radisson, E. Kanso – (Poster Presentation)
- **Weakly turbulent combustion in a Hele-Shaw cell**, *11th MEDITERRANEAN COMBUSTION SYMPOSIUM, 16-20 JUNE 2019 TENERIFE*, Basile Radisson, Joël Quinard, Bruno Denet, Christophe Almarcha – (Oral Presentation)
- **Vibro-acoustic control of flames in a Hele-Shaw burner**, *27th CANADIAN CONGRESS OF APPLIED MECHANICS, 27-30 MAY 2019 SHERBROOKE*, Basile Radisson, Juliette Piketty-Moine, Bruno Denet, Christophe Almarcha – (Oral Presentation)
- **Non-linear dynamics of flame fronts**, *LadHyX 9 Mai 2019*, Basile Radisson, Joël Quinard, Bruno Denet, Christophe Almarcha – (Seminar)
- **Non linear dynamics of premixed flames in a Hele-Shaw burner**, *17th INTERNATIONAL CONFERENCE ON NUMERICAL COMBUSTION 6-8 MAY 2019*, Basile Radisson, Christophe Almarcha, Elias Al Sarraf, Joël Quinard, Bruno Denet – (Oral Presentation)
- **Turbulent premixed flames in a Hele-Shaw cell**, *9th EUROPEAN COMBUSTION MEETING 14-17 APRIL 2019 LISBOA*, Basile Radisson, Joël Quinard, Bruno Denet, Christophe Almarcha – (Poster Presentation)
- **Contrôle de vitesse de flamme par un forçage paramétrique**, *22<sup>ème</sup> RENCONTRES DU NON LINÉAIRE 27-28 MARS 2019*, Basile Radisson, Bruno Denet, Christophe Almarcha – (Poster Presentation)
- **Propagation de flamme en cellule de Hele-Shaw : interactions vibroacoustique**, *JOURNÉE FRANÇOIS LACAS DES DOCTORANTS EN COMBUSTION, 22 JANVIER 2019*, Basile Radisson, Bruno Denet, Christophe Almarcha – (Oral Presentation)
- **Darrieus-Landau instability and Markstein numbers of premixed flames in a Hele-Shaw cell**, *37th INTERNATIONAL SYMPOSIUM ON COMBUSTION 29 JULY-3 AUGUST 2018*, Elias Al Sarraf, Christophe Almarcha, Joel Quinard, Basile Radisson, Bruno Denet, Pedro L Garcia Ybarra – (Oral Presentation)

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2/4

- **Dynamique non linéaire des flammes de prémélange : description en pôles**, *21<sup>ème</sup> RENCONTRES DU NON LINÉAIRE 28-29 MARS 2018*, B. Radisson, C. Almarcha, E. Al Sarraf, J. Quinard, E. Villermaux, B. Denet – (Selected Oral Presentation)
- **Non linear evolution of a chemical reaction front : The premixed flame case**, *Solvay Workshop on Chemical reactions and separation in flows Brussels, 19 - 21 April 2017*, C. Almarcha, B. Radisson, E. Al-Sarraf, J. Quinard, B. Denet – (Poster Presentation)
- **Flame instability in a Hele-Shaw cell : thickness effect**, *8th EUROPEAN COMBUSTION MEETING 18-21 APRIL 2017 DUBROVNIK*, E. Al-Sarraf, C. Almarcha, B. Radisson, B. Denet, J. Quinard – (Poster Presentation)
- **Dynamique non linéaire des flammes de prémélange : expériences et modélisation**, *IRPHÉ 4 AVRIL 2017*, B. Radisson, C. Almarcha, J. Quinard, E. Villermaux, B. Denet – (Seminar)
- **Dynamique non linéaire des flammes de prémélange : description en pôles**, *20<sup>ème</sup> RENCONTRES DU NON LINÉAIRE 21-22 MARS 2017*, B. Radisson, C. Almarcha, J. Quinard, E. Villermaux, B. Denet – (Poster Presentation)
- **Dynamique non-linéaire des flammes de prémélange, expérience et modélisation**, *JOURNÉE FRANÇOIS LACAS DES DOCTORANTS EN COMBUSTION, 9 DÉCEMBRE 2016*, B. Radisson, C. Almarcha, E. Al-Sarraf, J. Quinard, E. Villermaux, B. Denet, G. Joulin – (Oral Presentation)
- **Non linear dynamics of flame cusps : from experiments to modeling**, *69th ANNUAL MEETING OF THE APS DIVISION OF FLUID DYNAMICS PORTLAND*, C. Almarcha, B. Radisson, E. Al-Sarraf, J. Quinard, E. Villermaux, B. Denet, G. Joulin – (Oral Presentation)
- **Modelisation and Forecast of premixed flames**, *ICTAM 2016 MONTRÉAL, AUGUST 21-26*, B. Radisson, C. Almarcha, E. Al-Sarraf, J. Quinard, B. Denet – (Oral Presentation)
- **Premixed flame instability in a Hele-Shaw burner**, *ICTAM 2016 MONTRÉAL, AUGUST 21-26*, E. Al Sarraf, C. Almarcha, B. Radisson, J. Quinard, B. Denet – (Poster Presentation)
- **Sivashinsky equation for flame dynamics, an experimental test**, *STATPHYS 26 LYON, JULY 18-22, 2016*, B. Denet, B. Radisson, C. Almarcha, E. Al-Sarraf, J. Quinard – (Poster Presentation)
- **Dynamique de flammes, expériences et modélisations**, *4<sup>ème</sup> colloque de la fédération Fabri de Peiresc, 21 AVRIL 2016*, B. Radisson, C. Almarcha, B. Denet, E. Al-Sarraf, J. Quinard, E. Villermaux, G. Joulin – (Oral Presentation)
- **Stabilité des écoulements de canal à densité variable**, *CFM, LYON 24-28 AOÛT, 2015*, B. Radisson, B. Di Pierro, M. Buffat, A. Cadiou, L. Le Penven – (Oral Presentation)

## Awards

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— **2019 Paul Laffitte prize**, The Paul Laffitte prize is awarded every other year by the french section of the combustion institute. This award recognizes a young scientist who has performed a doctoral thesis work of outstanding scientific quality in the area of combustion.

## Teaching and Mentoring Experience

- 2021 **Undergraduate project supervision**, *Design of a control system for a skateboard robot evolving on a curved terrain*, Kanso lab, Los Angeles  
Joint supervision of undergraduate students Gabriel Coto, Michael Koutoumbas, Mikell Myers, John Rogers and Erick Zamora with Pr. Eva Kanso
- 2021 **Master Thesis supervision**, *Skateboarding physics*, Kanso lab, Los Angeles  
Joint supervision of graduate student Arnaud Thuillier with Pr. Eva Kanso
- 2018 **Internship supervision**, *Flame propagation in a Hele-Shaw cell : vibroacoustic coupling*, IRPHÉ, Marseille  
Joint supervision of undergraduate (L3 ENS) intern student Juliette Piketty-Moine with Doctor Christophe Almarcha
- 2018 **Internship supervision**, *Flame propagation in a Hele-Shaw cell : thickness effect*, IRPHÉ, Marseille  
Joint supervision of postgraduate (M2) intern student Irene Ferrero Moreno with Doctor Christophe Almarcha
- 2017 **Internship supervision**, *Premixed flames dynamics in an external forcing flow*, IRPHÉ, Marseille  
Joint supervision of postgraduate (M1) intern student Corentin Nougier with Doctor Christophe Almarcha
- 2017-2018 **Practical classes**, IUT Aix-Marseille Université, Marseille  
Practical classes in mechanics for undergraduate students (L1, L2) (36h)
- 2017-2018 **Lecture courses**, IUT Aix-Marseille Université, Marseille  
Lecture courses in air treatment for undergraduate students (L1, L2) (28h)

## Languages

French Mother tongue  
English Fluent  
Spanish Basic

## Contact Persons

- Dr. Anaïs Abramian – [anais.abramian@sorbonne-universite.fr](mailto:anais.abramian@sorbonne-universite.fr) – current postdoc advisor  
— Dr. Christophe Clanet – [christophe.clanet@ladhyx.polytechnique.fr](mailto:christophe.clanet@ladhyx.polytechnique.fr) – president of my PhD thesis committee

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