

Doctor-engineer in applied mathematics

Positions

- September 2017 — **Assistant professor**, GAMMA3,, Université de technologie de Troyes
Today
- October 2016 — **Post-doctoral contract**, *Laboratoire de Mathématiques de Versailles*, Université de Versailles
August 2017 Saint-Quentin-en-Yvelines, IMOSE
- The post-doctoral contract is funded by the Fondation Mathématique Jacques Hadamard (FMJH) and Hadamard Mathematics Labex (LMH) to work with IMOSE (Institut pour la Modélisation et l’Optimisation des Systèmes et des Énergies) created by C. Chalons and L. Dumas, which aims at make a link between companies with needs of simulation and modelisation and researchers.

Educations

- October 2013 — **PhD**, *Laboratoire de Mathématiques Jean Leray*, Université de Nantes, France
- September 2016 “High order and asymptotic preserving schemes for radiative hydrodynamics”, under the direction of R. Turpault (Institut de Mathématiques de Bordeaux).
- The aim of this PhD thesis is to design a high-order and explicit finite volume scheme which conserves the asymptotic behaviour of hyperbolic systems of conservations laws with stiff source terms which degenerate to a diffusion limit. This work is conducted on 2D unstructured meshes and the main difficulty is the preservation of the set of admissible states in all regimes.
- November 2013 **Engineering’s degree**, *ENSEIRB-MATMECA*, Bordeaux-INP, France
Graduate School of Engineering in Mathematical modelling and mechanics
- September 2013 **Master’s degree**, *Université de Bordeaux*, France
Master in modelling, mathematical engineering, statistic and economic (MIMSE)

Publications

- [5] A. Cherouat, H. Borouchaki, and **F. Blachère**, Métrique et maillage - définition et bases théoriques, *Mise en forme des métaux et fonderie*, Sep. 2023. DOI: [10.51257/a-v1-m3011](https://doi.org/10.51257/a-v1-m3011)
- [4] **F. Blachère** and H. Borouchaki, Covariance edges matrix of geometric elements, *Annals of Mathematics and Physics*, vol. 6, no. 2, pp. 100–107, Jul. 2023. DOI: [10.17352/amp.000088](https://doi.org/10.17352/amp.000088)
- [3] **F. Blachère**, C. Chalons, and R. Turpault, Very high-order asymptotic-preserving schemes for hyperbolic systems of conservation laws with parabolic degeneracy on unstructured meshes, *Comput. Math. Appl.*, vol. 87, pp. 41–49, 2021. DOI: [10.1016/j.camwa.2021.02.003](https://doi.org/10.1016/j.camwa.2021.02.003)
- [2] **F. Blachère** and R. Turpault, An admissibility and asymptotic preserving scheme for systems of conservation laws with source term on 2D unstructured meshes with high-order MOOD reconstruction, *Comput. Methods Appl. Mech. Engrg.*, vol. 317, pp. 836–867, 2017. DOI: [10.1016/j.cma.2017.01.012](https://doi.org/10.1016/j.cma.2017.01.012)
- [1] **F. Blachère** and R. Turpault, An admissibility and asymptotic-preserving scheme for systems of conservation laws with source term on 2D unstructured meshes, *J. Comput. Phys.*, vol. 315, pp. 98–123, 2016. DOI: [10.1016/j.jcp.2016.03.045](https://doi.org/10.1016/j.jcp.2016.03.045)

Communications

- Août 2018 ABPDE III, Lille, France
- Mai 2018 CANUM 2018, Cap d'Agde, France
- Mars 2018 ANR ACHyLLES - final workshop, Bordeaux, France
- Juin 2017 Congrès SMAI 2017, La Tremblade, France
- August 2016 Hyp 2016, Aachen, Germany
- May 2016 SHARK-FV, São Félix, Portugal
- June 2015 NumHyp, Cortona, Italy
- June 2015 Summer school of the GDR EGRIN, Piriac, France
- April 2014 SHARK-FV, Ofir, Portugal