






Lucien VIENNE

 17 December 1993

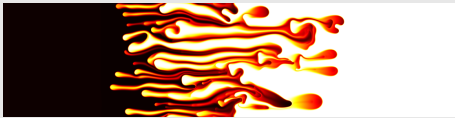
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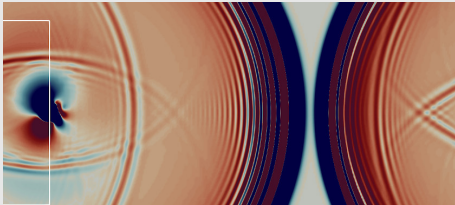
Skills

Topics

- Fluid Mechanics, [Lattice Boltzmann method](#), kinetic theory, multi-species diffusion, instability, porous medium.



Viscous fingering of a binary mixture



Vortex convected through a grid transition

Programming

- Python, FORTRAN, C++.
- MPI, OpenMP, cudaFortran, parallel STL (GPU).

Languages

- French native speaker
- English oral: fair - written: good TOEIC score: 940

Extra

- Sports: windsurfing, sailing, hiking, mountain biking
- Hobby: sci-fi books and movies

Research

- 2020 - 2021 **Postdoc. researcher, École Centrale de Lyon - LMFA** Lyon, France
High-fidelity multi-resolution aeroacoustics simulations with the lattice Boltzmann method
- Research funding by DGAC (french civil aviation) within the public-private ProLB consortium. Main objective is the reduction of spurious noise emission at the grid transition associated with mesh refinement.
 - Development of a reconstruction scheme that depends only on the macroscopic quantities. Accuracy and spectral behavior (von Neumann analysis) of a new class of recursive finite difference LB schemes are examined.
 - Time-stepping strategy for the lattice Boltzmann method is investigated.

- 2016 - 2019 **PhD. Student, CNAM - DynFluid** Paris, France
Simulation of multi-component flows by the lattice Boltzmann method and application to the viscous fingering instability
- Development of a new lattice Boltzmann method for the simulation of multiple miscible species. For pure diffusion cases, Maxwell-Stefan equations are recovered. Implementation is easier compare to previous models.
 - Simulation of the viscous fingering instability. Effects of ternary diffusion are highlighted.
 - HPC coding from scratch using FORTRAN and Python with MPI and OpenMP paradigms. Simulations ($O(1000)$ cores) performed on national supercomputers.

Publications

Journal articles

- "Time-stepping strategy with the lattice Boltzmann method", under preparation.
- "[Recursive Finite-Difference Lattice Boltzmann Schemes](#)", 2021, submitted in *Computers & Mathematics with Applications*.
- "A Lattice Boltzmann study of miscible viscous fingering for binary and ternary mixtures", 2020, submitted in *Physical Review Fluids*.
- "[Lattice Boltzmann method for miscible gases: A forcing-term approach](#)", 2019, in: *Physical Review E*.

Conferences

- ICMMES 2019, talk, Edinburgh UK
- AIAA Aviation 2019, talk & conference paper, Dallas USA
- DSFD 2018, poster, Worcester USA
- ICMMES 2017, poster 🏆, Nantes FR

Education

- 2015 - 2016 **MSc. Student, Université Côte d'Azur** Nice, France
 Dual master's degree, major: numerical mechanics
- 2013 - 2016 **MSc. Student, SeaTech school of engineering** Toulon, France
 Major: fluid mechanics and marine engineering

Experience

- Nov 2020 **Teaching practicals on free-surface flows** Lyon, France
 Dec 2020 École Centrale de Lyon (36h)
- Sep 2017 **Teaching practicals on numerical optimization** Paris, France
 Sep 2019 Arts et Métiers ParisTech (72h)
- Mar 2016 **Offshore installation analysis engineer - Internship** Paris, France
 Aug 2016 Saipem
- Jun 2015 **Research intern** Helsinki, Finland
 Aug 2015 Aalto University

References

- Emmanuel Lévêque, CNRS senior researcher, LMFA, emmanuel.leveque@ec-lyon.fr
- Simon Marié, associated professor, DynFluid, simon.marie@lecnam.net