

LISTE DES PUBLICATIONS

Frédérique LAURENT-NÈGRE

Publications dans des revues à comité de lecture

- [L1] R. O. Fox, J. W. Posey, R. W. Houim et F. Laurent, “A kinetic-based model for polydisperse, high-speed, fluid-particle flows”, In : *International Journal of Multiphase Flow* 171 (2024), p. 104698..
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- [L2] F. Laurent et R. O. Fox “Evaluation of the 1-D hyperbolic quadrature method of moments for non-equilibrium flows”, In : *ESAIM ProcS* (2024). in press
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- [L3] R. O. Fox, F. Laurent et A. Passalacqua, “The Generalized Quadrature Method of Moments”, In : *Journal of Aerosol Science* 167 (2023), p. 106096.
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- [L4] R. O. Fox et F. Laurent “Hyperbolic quadrature method of moments for the one dimensional kinetic equation”, In : *SIAM Journal on Applied Mathematics* (2022), 82.2 (2022), p. 750-771.
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- [L5] R. O. Fox, F. Laurent et A. Vié, “A Hyperbolic Two-Fluid Model for Compressible Flows with Arbitrary Material-Density Ratios”, In : *Journal of Fluid Mechanics* 903 (2020), A5.
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- [L10] R. O. Fox, F. Laurent, A. Vié, “Conditional Hyperbolic Quadrature Method of Moments for Kinetic Equations”, *Journal of Computational Physics*, 365, pp. 269–293 (2018).
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- [L11] A. Passalacqua, F. Laurent, E. Madadi-Kandjani, J. C. Heylmun, R. O. Fox, “An open-source quadrature-based population balance solver for OpenFOAM”, *Chemical Engineering Science*, 176, pp. 306–318 (2018).
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- [L12] C. Chalons, R. O. Fox, F. Laurent, M. Massot, and A. Vié, “Multivariate Gaussian extended quadrature method of moments for turbulent disperse multiphase flow”, *SIAM Multiscale Modeling and Simulation* 15.4, pp. 1553-1583 (2017).
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- [L13] F. Laurent, T. T. Nguyen “Realizable second-order finite-volume schemes for the advection of moment sets of the particle size distribution”, *Journal of Computational Physics*, 337, pp. 309-338 (2017).
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- [L14] A. Sibra, J. Dupays, A. Murrone, F. Laurent, M. Massot, “Simulation of reactive polydisperse sprays strongly coupled to unsteady flows in solid rocket motors : Efficient strategy using Eulerian Multi-Fluid methods”, *Journal of Computational Physics*, 339, pp. 210 -246 (2017).
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- [L16] M. Essadki, S. de Chaisemartin, S. Jay, M. Massot, F. Laurent, A. Larat, “Adaptive mesh refinement for polydisperse spray simulation”, in *Oil & Gas Science and Technology*, 71(5) 61 (2016). DOI : 10.2516/ogst/2016012
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- [L17] F. Laurent, A. Sibra, F. Doisneau, “Two-size moment multi-fluid model : a robust and high-fidelity description of polydisperse moderately dense evaporating sprays”, *Communications in Computational Physics*, 20 (4), pp. 902-943 (2016).
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- [S1] V. Boniou, R.O. Fox, F. Laurent, “A Kinetic-Based Model for High-Speed, Monodisperse, Fluid-Particle Flows”, *submitted* (2023). <https://hal.science/hal-04037062>
- [S2] J. Y. Xing, F. Laurent, B. Franzelli, C. P. T. Groth, “Comparative Assessment of Fractional-Order Univariate and Bivariate Quadrature-Based Moment Closures for Predicting Soot Production in Laminar Flames”, *in preparation* (2024).

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- [C1] R. Letournel, F. Laurent, M. Massot et A. Vié, “Impact of particle field heterogeneity on the dynamics of turbulent two-way coupled particulate flows”, in *Proceedings of the 10th International Conference on Multiphase Flows, ICMF 2019*, Rio de Janeiro, Brazil, 2019, pp. 1-11. <https://hal.science/hal-02392723>
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- [C3] M. Essadki, S. de Chaisemartin, M. Massot, F. Laurent, A. Larat and S. Jay, “A new high order moment method for polydisperse evaporating sprays dedicated to the coupling with separated two-phase flows in automotive engine”, in *Proceedings of the 9th International Conference on Multiphase Flows, ICMF 2016*, Firenze, Italy, 2016, pp. 1-6. <https://hal.science/hal-01393153>
- [C4] V. Dupif, M. Massot, J. Dupays, F. Laurent and C. Le Touze, “On the influence of the numerical strategy on the predictive character of Euler-Euler models for two-phase flow simulations in solid rocket motor instabilities”, in *Proceedings of the 9th International Conference on Multiphase Flows, ICMF 2016*, Firenze, Italy, 2016, pp. 1-6. <https://hal.science/hal-01862008>
- [C5] M. Boileau, J. Lagarde, V. Dupif, F. Laurent and M. Massot, “On the influence of the numerical strategy on the predictive character of Euler-Euler models for two-phase flow simulations in solid rocket motor instabilities”, in *Proceedings of the 9th International Conference on Multiphase Flows, ICMF 2016*, Firenze, Italy, 2016, pp. 1-6. <https://hal.science/hal-01543507>
- [C6] O. Emre, M. Massot, S. de Chaisemartin, S. Jay, and F. Laurent, “Eulerian modeling of polydisperse evaporating spray under realistic internal combustion engine conditions”, in *Proceedings of the 8th International Conference on Multiphase Flows, ICMF 2013*, Jeju, Korea, 2013, pp. 1-15.
- [C7] F. Doisneau, F. Laurent, A. Murrone, J. Dupays and M. Massot, “Optimal Eulerian model for the simulation of dynamics and coalescence of alumina particles in solid propellant combustion”, in *Proceedings of the 7th International Conference on Multiphase Flows, ICMF 2010*, Tampa - Florida USA, United States, 2010, pp. 1-15. <https://hal.science/hal-00498215>

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- [C10] M. Boileau, C. Chalons, J.-F. Bourgoïn, C. Terrier, F. Laurent, S. de Chaisemartin, and M. Massot, “Robust numerical schemes for Eulerian spray DNS and LES in two-phase turbulent flows”, in *Proceedings of the 7th International Conference on Multiphase Flows, ICMF 2010*, Tampa, FL, United States, 2010, pp. 1-15.
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- [O1] F. Laurent, A. Vié, C. Chalons, R. O. Fox and M. Massot, “A hierarchy of Eulerian models for trajectory crossing in particle-laden turbulent flows over a wide range of Stokes numbers”, in *Annual Research Brief 2012*, the Center for Turbulence Research - Stanford University (2013) pp 193-204.

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- [O3] L. Fréret, O. Thomine, F. Laurent, J. Réveillon and M. Massot “Direct Numerical Simulation of polydisperse evaporating sprays in 3D jet configuration using Euler-Euler and Euler-Lagrange formalisms”, in *Proceedings of the summer program 2012*, publication of Center for Turbulence Research - Stanford University (2012), pp 345-354.
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- [O7] M. Boileau, C. Chalons, F. Laurent, S. de Chaisemartin and M. Massot, “Robust numerical schemes for Eulerian spray DNS and LES in two-phase turbulent flows”, in *Proceedings of the summer program 2010*, publication of Center for Turbulence Research - Stanford University (2010), pp 359-370.
- [O8] L. Fréret, O. Thomine, J. Reveillon, S. de Chaisemartin, F. Laurent and M. Massot, “On the role of preferential segregation in flame dynamics in polydisperse evaporating sprays”, in *Proceedings of the summer program 2010*, publication of Center for Turbulence Research - Stanford University (2010), pp 383-392.
- [O9] M. Massot, F. Laurent, S. de Chaisemartin, L. Fréret and D. Kah, “Eulerian multi-fluid models : modeling and numerical methods”, in *Modelling and Computation of Nanoparticles in Fluid Flows*, Lectures of the von Karman Institute, NATO RTO-EN-AVT 169, 2009, pp. 1-86.
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- [A1] R. Letournel, F. Laurent, M. Massot et A. Vié, “Reproducing segregation and particle dynamics in Large Eddy Simulation of particle-laden flows”, in *Proceedings of the ICLASS 2021, 15th Triennial International Conference on Liquid Atomization and Spray Systems*, Edinburgh, UK, 2021, pp. 1-8
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- [A2] V. Dupif, M. Massot, J. Dupays, F. Laurent, and C. Le Touze, “Influence of numerical methods on the simulation of the steady and unsteady two-phase flow in solid rocket motors”, in *Proceedings of the 6th European Conference for Aerospace Sciences*, Kraków, Poland, 2015, pp. 1-15.
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Rapports et autres

- [R1] F. Laurent, “Méthodes de moments pour la description de sprays et d’aérosols : modélisations et simulations numériques”. HDR. Université Paris Sud, 2017.
- [R2] M. Boileau, A. Larat, F. Laurent-Nègre, M. Massot, *Une équipe de mathématiques dans un laboratoire d’ingénierie ; ou comment tenter de repousser les limites de l’interaction des mathématiques sans y perdre son identité*, Matapli no 101 (2013), pp 125-138.
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