

List of publications

Article under review in refereed Journals:

- [1] J. Massot, M. Massot, L. Series, C. Tenaud (2026). *A splitting-ImEx strategy for convection-reaction-diffusion problems with space-time adaptation and error control*. NASA Technical-Note. Under review.

Articles in refereed Journals:

- [1] P. Alison, A. Beccantini, S. Kudriakov, A. Bengaouer, C. Tenaud (2026). *Numerical Modeling of Premixed Combustion of Li-ion Battery Thermal Runaway Gases: Study of Flame Acceleration by a Normal Shock in an Obstacle-Laden Channel*. Journal of Loss Prevention in the Process Industries, **103**: 106052. <https://doi.org/10.1016/j.jlp.2026.106052>
- [2] P.-A. Massot, L. Lecointre, C. Tenaud, M. Massot, S. Kudriakov, E. Studer (2026). *Characteristic boundary conditions using ghost cells (GC-CBC) for high-order finite volume simulations of multicomponent Euler gas equations handling near-zero/sonic*. Computers & Fluids, **314**:107086. <https://doi.org/10.1016/j.compfluid.2026.107086>
- [3] I. Ben Hassan Saïdi, S. Wang, G. Fournier, C. Tenaud and J.-C. (2025). *Modal analysis of the triadic interactions in the dynamics of a transitional shock wave boundary layer interaction*. Journal of Fluid Mechanics, **1009**: A43-1—A43-46. <https://doi.org/10.1017/jfm.2025.236>
- [4] M. Plath, F. Renac, O. Marquet, C. Tenaud (2024). *A high-order local correlation-based transition model for transonic airfoil flows*. Computers & Fluids, **285**:106461. <https://doi.org/10.1016/j.compfluid.2024.106461>
- [5] L. Lecointre, R. Vicquelin, S. Kudriakov, E. Studer, and C. Tenaud (2022). *High-order numerical scheme for compressible multi-component real gas flows using an extension of the Roe approximate Riemann solver and specific Monotonicity-Preserving constraints*. Journal of Computational Physics, **450**: 110821. <https://doi.org/10.1016/j.jcp.2021.110821>
- [6] Z. Zou, N. Grenier, S. Kokh, C. Tenaud, and E. Audit (2022). *Compressible solver for two-phase flows with sharp interface and capillary effects preserving accuracy in the low Mach regime*. Journal of Computational Physics, **448**: 110735. <https://doi.org/10.1016/j.jcp.2021.110735>
- [7] A. Picard, N. Lelong, O. Jamon, V. Fauvher, and C. Tenaud (2021). *A Finite-Volume Chimera method for Fast Transient Dynamic problems with complex flows*. International Journal of Computational Fluid Dynamics, **35**(10): 799—825. <https://doi.org/10.1080/10618562.2021.2009468>
- [8] M.-A. N'Guessan, M. Massot, L. Séries & C. Tenaud (2021). *High order time integration and mesh adaptation with error control for incompressible Navier-Stokes and scalar transport resolution on dual grids*. Journal of Computational and Applied Mathematics, **387**: 112542. <https://doi.org/10.1016/j.cam.2019.112542>

- [9] E. Saikali, A. Sergent, Y. Wang, P. Le Quéré, G. Bernard-Michel and C. Tenaud, (2020). [A well-resolved numerical study of a turbulent buoyant helium jet in a highly-confined two-vented enclosure.](https://doi.org/10.1016/j.ijheatmasstransfer.2020.120470) International Journal of Heat & Mass Transfer, **163**: 20470. <https://doi.org/10.1016/j.ijheatmasstransfer.2020.120470>
- [10] I. Ben Hassan Saïdi, G. Fournier & C. Tenaud (2020), [On the behavior of high order one-step monotonicity-preserving scheme for direct numerical simulation of turbulent flows.](https://doi.org/10.1080/10618562.2020.1819535) International Journal of Computational Fluid Dynamics, **34**(9): 671—704. <https://doi.org/10.1080/10618562.2020.1819535>
- [11] M. Garcia-Gasulla, F. Banchelli, K. Peiro, G. Ramirez-Gargallo, G. Houzeaux, I. Ben Hassan Saïdi, C. Tenaud, I. Spisso, & F. Mantovani (2020). [A generic performance analysis technique applied to different CFD methods for HPC.](https://doi.org/10.1080/10618562.2020.1778168) International Journal of Computational Fluid Dynamics, **34**(7-8): 508—528. <https://doi.org/10.1080/10618562.2020.1778168>
- [12] Z. Zou, E. Audit, N. Grenier & C. Tenaud (2020). [An Accurate Sharp Interface Method for Two-Phase Compressible Flows at Low-Mach Regime.](https://doi.org/10.1007/s10494-020-00125-1) Flow Turbulence and Combustion, **105**: 1413—1444. <https://doi.org/10.1007/s10494-020-00125-1>
- [13] E. Saikali, G. Bernard-Michel, A. Sergent, C. Tenaud and R. Salem (2019). [Highly resolved large eddy simulations of a binary mixture flow in a cavity with two vents: influence of the computational domain.](https://doi.org/10.1016/j.ijhydene.2018.08.108) International Journal of Hydrogen Energy, International Journal of Hydrogen Energy, **44**(17): 8856—8873. <https://doi.org/10.1016/j.ijhydene.2018.08.108>
- [14] G. Bernard-Michel, E. Saikali, A. Sergent and C. Tenaud, (2019). [Comparisons of experimental measurements and Large-Eddy Simulation for a Helium release in a two vents enclosure.](https://doi.org/10.1016/j.ijhydene.2018.07.120) International Journal of Hydrogen Energy, **44**(17): 8935-8953. <https://doi.org/10.1016/j.ijhydene.2018.07.120>
- [15] C. Tenaud, B. Podvin, Y. Fraigneau and V. Daru (2016). [On wall pressure fluctuations and their coupling with vortex dynamics in a separated-reattached turbulent flow over a blunt flat plate.](https://doi.org/10.1016/j.ijheatfluidflow.2016.08.002) International Journal of Heat and Fluid Flows, **61**: 730—748. <https://doi.org/10.1016/j.ijheatfluidflow.2016.08.002>
- [16] P. Debesse, L. Pastur, F. Lusseyran, Y. Fraigneau, C. Tenaud, C. Bonamy, A.V.G. Cavalieri and P. Jordan (2016). [A comparison of data reduction techniques for the aeroacoustic analysis of flow over a blunt flat plate.](https://doi.org/10.1007/s00162-015-0375-4) Theoretical and Computational Fluid Dynamics, **30**(3): 253—274. <https://doi.org/10.1007/s00162-015-0375-4>
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- [18] M.A. Puscas, L. Monasse, A. Ern, C. Tenaud and C. Mariotti (2015). [A conservative embedded boundary method for an inviscid compressible flow coupled with a fragmenting structure,](https://doi.org/10.1002/nme.4921) International Journal for Numerical Methods in Engineering, **103**(13): 970—995. <https://doi.org/10.1002/nme.4921>
- [19] M.A. Puscas, L. Monasse, A. Ern, C. Tenaud, C. Mariotti and V. Daru (2015). [A time semi-implicit scheme for the energy-balanced coupling of a shocked fluid flow with a deformable structure,](https://doi.org/10.1016/j.jcp.2015.04.012) Journal of Computational Physics, **296**: 241—262. <https://doi.org/10.1016/j.jcp.2015.04.012>

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- [25] Tenaud, C. and Duarte, M. (2011). [Tutorials on Adaptive multiresolution for mesh refinement applied to fluid dynamics and reactive media problems](#). ESAIM Proceedings, **34**: 184–239. <https://doi.org/10.1051/proc/201134004>
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Ouvrages ou chapitre dans ouvrages :

- [1] Fournier, G. ; Chpoun, A. ; Fraigneau, Y. and Tenaud, C., [*Direct Numerical Simulations of the Shock-Induced Separation of a Laminar Boundary Layer*](#). DIRECT AND LARGE-EDDY SIMULATION X Book Series: ERCOFTAC Series Volume: **24** Pages: 327—332 (2018).
- [2] L. Benteleb, O. Roussel and C. Tenaud. [*Adaptive multiresolution methods for the simulation of shocks/shear layer interaction in confined flows*](#). Numerical mathematics and advanced applications, Springer, Berlin : 761—769 (2006).
- [3] V. Daru and C. Tenaud. *High resolution Monotonicity-Preserving schemes for unsteady compressible flows*, Computational Fluid Dynamics, S. Armfield, P. Morgan, K. Srinivas (Eds), Springer: 241—246 (2002).
- [4] V. Daru and C. Tenaud. *Application of TVD high resolution schemes to the calculation of the viscous shock tube problem*, Godunov methods: theory and applications, E.F. Toro (Eds.): 197—202, Kluwer Academic/Plenum Publisher, New York, 2001.

- [5] R. Lardat, A. Dulieu, W.Z. Shen, L. Ta Phuoc, C. Tenaud, L. Cordier and J. Delville. *Large Eddy Simulation of spatially developing 3D shear layer in incompressible flow: comparisons with detailed experiments*, Simulation and Identification of Organized Structures in Flows, N. Aubry and J.N. Sørensen (Eds.), Kluwer Academic Publishers: 447—456, 1999.
- [6] E. Coustols, C. Tenaud and J. Cousteix. *Manipulation of turbulent boundary layer in zero pressure gradient flows: detailed experiments and modelling*, Selected paper from the 6th International Symposium on Turbulent Shear Flows, Toulouse, France, J.C. André, J. Cousteix, F. Durst, B.E. Launder, F.W. Schmitt, J.H. Whitelaw (Eds.), Springer-Verlag: 164—178 (1989).

Lecture notes:

- [1] C. Tenaud & M. Duarte, [*Adaptive multiresolution for mesh refinement applied to flow problems*](#). Lecture notes and tutorials at the MR school, Fréjus France, June 2010.
- [2] V. Daru et C. Tenaud : [*Approximations d'ordre élevé pour les écoulements compressibles avec discontinuités*](#). Lecture notes at the École de Printemps MFN, Roscoff, juin 2005.
- [3] C. Tenaud : [*Introduction à la Simulation des Grandes Échelles pour les écoulements de fluide compressible*](#). Lecture notes at the École de Printemps MFN, Aussois, juin 1999.