

List of publications

Article under review or in press in refereed Journals:

- [1] 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, under revision.

Articles in refereed Journals:

- [1] 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>
- [2] 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>
- [3] 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>
- [4] 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>
- [5] 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>
- [6] 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*. International Journal of Heat & Mass Transfer, **163**: 20470.
<https://doi.org/10.1016/j.ijheatmasstransfer.2020.120470>
- [7] 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*. International Journal of Computational Fluid Dynamics, **34**(9): 671—704.
<https://doi.org/10.1080/10618562.2020.1819535>
- [8] 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*.

- International Journal of Computational Fluid Dynamics, **34**(7-8): 508—528.
<https://doi.org/10.1080/10618562.2020.1778168>
- [9] Z. Zou, E. Audit, N. Grenier & C. Tenaud (2020). *An Accurate Sharp Interface Method for Two-Phase Compressible Flows at Low-Mach Regime*. Flow Turbulence and Combustion, **105**: 1413—1444.
<https://doi.org/10.1007/s10494-020-00125-1>
- [10] 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*. International Journal of Hydrogen Energy, International Journal of Hydrogen Energy, **44**(17): 8856—8873. <https://doi.org/10.1016/j.ijhydene.2018.08.108>
- [11] 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*. International Journal of Hydrogen Energy, **44**(17): 8935-8953. <https://doi.org/10.1016/j.ijhydene.2018.07.120>
- [12] 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*. International Journal of Heat and Fluid Flows, **61**: 730—748. <https://doi.org/10.1016/j.ijheatfluidflow.2016.08.002>
- [13] 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*. Theoretical and Computational Fluid Dynamics, **30**(3): 253—274.
<https://doi.org/10.1007/s00162-015-0375-4>
- [14] C. Tenaud, O. Roussel and L. Bentaleb (2015). *Unsteady compressible flow computations using an adaptive multiresolution technique coupled with a high-order one-step shock-capturing scheme*, Computers and Fluids, **120**(13): 111—125. <https://doi.org/10.1016/j.compfluid.2015.07.025>
- [15] 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*, International Journal for Numerical Methods in Engineering, **103**(13): 970—995.
<https://doi.org/10.1002/nme.4921>
- [16] 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*, Journal of Computational Physics, **296**: 241—262. <https://doi.org/10.1016/j.jcp.2015.04.012>
- [17] B. Podvin, Y. Fraigneau, C. Tenaud and V. Daru (2014). *Coherent structures in the boundary layer of a flat thick plate*, Comptes Rendus Mécanique, **342** (6-7): 417—424.
- [18] M. Duarte, S. Descombes, C. Tenaud, S. Candel and M. Massot (2013). *Time-space adaptive numerical methods for the simulation of combustion fronts*, Combustion and Flame, **160** (6): 1083—1101.
- [19] M. Duarte, M. Massot, S. Descombes, C. Tenaud, T. Dumont, V. Louvet and F. Laurent (2012). *New resolution strategy for multi-scale reaction waves using time operator splitting, Space adaptive multiresolution and dedicated high order implicit/explicit time integrators*, SIAM Journal on Scientific Computing, **34** (1): A76—A104.
- [20] L. Monasse, V. Daru, C. Mariotti, S. Piperno and C. Tenaud (2012). *A conservative coupling algorithm between a compressible flow and a rigid body*

- [using an Embedded Boundary method.](#), Journal of Computational Physics, **231** (7): 2977–2994.
- [21] Duarte, M., M. Massot, S. Descombes, C. Tenaud, and S. Candel (2011). *Time-space adaptive numerical methods for the simulation of combustion fronts*, in Center for Turbulence Research, Annual Research Briefs, P. Moin and J.E. Larson, Eds., 347–358.
- [22] 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>
- [23] Duarte, M., M. Massot, F. Laurent, S. Descombes, C. Tenaud, T. Dumont, and V. Louvet (2011). [New Resolution Strategies for Multi-scale Reaction Waves: Optimal Time Operator Splitting and Space Adaptive Multiresolution.](#) CLEI Electronic Journal (Latin-american Center for Informatics Studies), **14** (1): 1–14.
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- [25] V. Daru and C. Tenaud (2009). [Numerical simulation of the viscous shock tube problem by using a high-resolution monotonicity-preserving scheme,](#) Computers and Fluids, vol. **38** (3): 664–676.
- [26] A. Ben Moussa, H. Ksibi, C. Tenaud and M. Baccar, (2005). [Parametric study on the nozzle geometry to control the supercritical fluid expansion,](#) International Journal of Thermal Sciences, **44**: 774–786.
- [27] C. Tenaud, S. Pellerin, A. Dulieu and L. Ta Phuoc, (2005). [Large eddy simulations of a spatially developing incompressible 3D mixing layer using the \$v\text{-}\omega\$ formulation,](#) Computers and Fluids, **34**: 69–96.
- [28] V. Daru and C. Tenaud, (2004). [High order one-step monotonicity preserving schemes for unsteady flow calculations,](#) Journal of Computational Physics, **193**: 563–594.
- [29] A. Cadiou and C. Tenaud, (2004). [Implicit WENO shock capturing scheme for unsteady flows. Application to one-dimensional Euler equations,](#) International Journal for Numerical Methods in Fluids, **45**: 197–229
- [30] C. Appert, C. Tenaud, X. Chavanne, S. Balibar, F. Caupin and D. d'Humières, (2003). [Nonlinear effects and shock formation in the focusing of a spherical acoustic wave: Numerical simulations and experiments in liquid helium,](#) European Physical Journal - B, **35**: 531–549
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- [32] S. Pellerin, A. Dulieu, L. Ta Phuoc and C. Tenaud, (2001). *Incompressible 3-D mixing layer using LES: Influences of sub-grid scales models and of upstream perturbations*, Computational Fluid Dynamics Jal., Special number volume **11**: 622–626
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- [37] A. Chabni, P. Le Quéré, C. Tenaud and H. Laatar, (1998). *Modelling of pollutant dispersion in urban street canyons by means of a large-eddy simulation approach*, Int. Jal. Vehicle Design, **20** (1-4): 88—95
- [38] C. Tenaud and L. Ta Phuoc (1997). *Large Eddy Simulation of unsteady compressible separated flow around a NACA0012 airfoil*, Lecture Notes in Physics, **490**: 424—429
- [39] H. Ksibi, C. Tenaud, P. Subra and Y. Garrabos, (1996). [*Numerical Simulation of Rapid Expansion of Supercritical Fluid*](#), European Jal. of Mech. B/Fluids, **15** (3): 569—596
- [40] C. Tenaud and L. Ta Phuoc, (1995). *Numerical simulation of unsteady compressible viscous flow: NACA 0012 airfoil - vortex interaction*, Lecture Notes in Physics, **453**: 561—567
- [41] C. Tenaud and L. Ta Phuoc, (1994). *Numerical simulation of unsteady compressible viscous flow around a NACA 0012 airfoil*, Notes on Numerical Fluid Dynamics, **47**: 278—287.

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. Bentaleb, 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.